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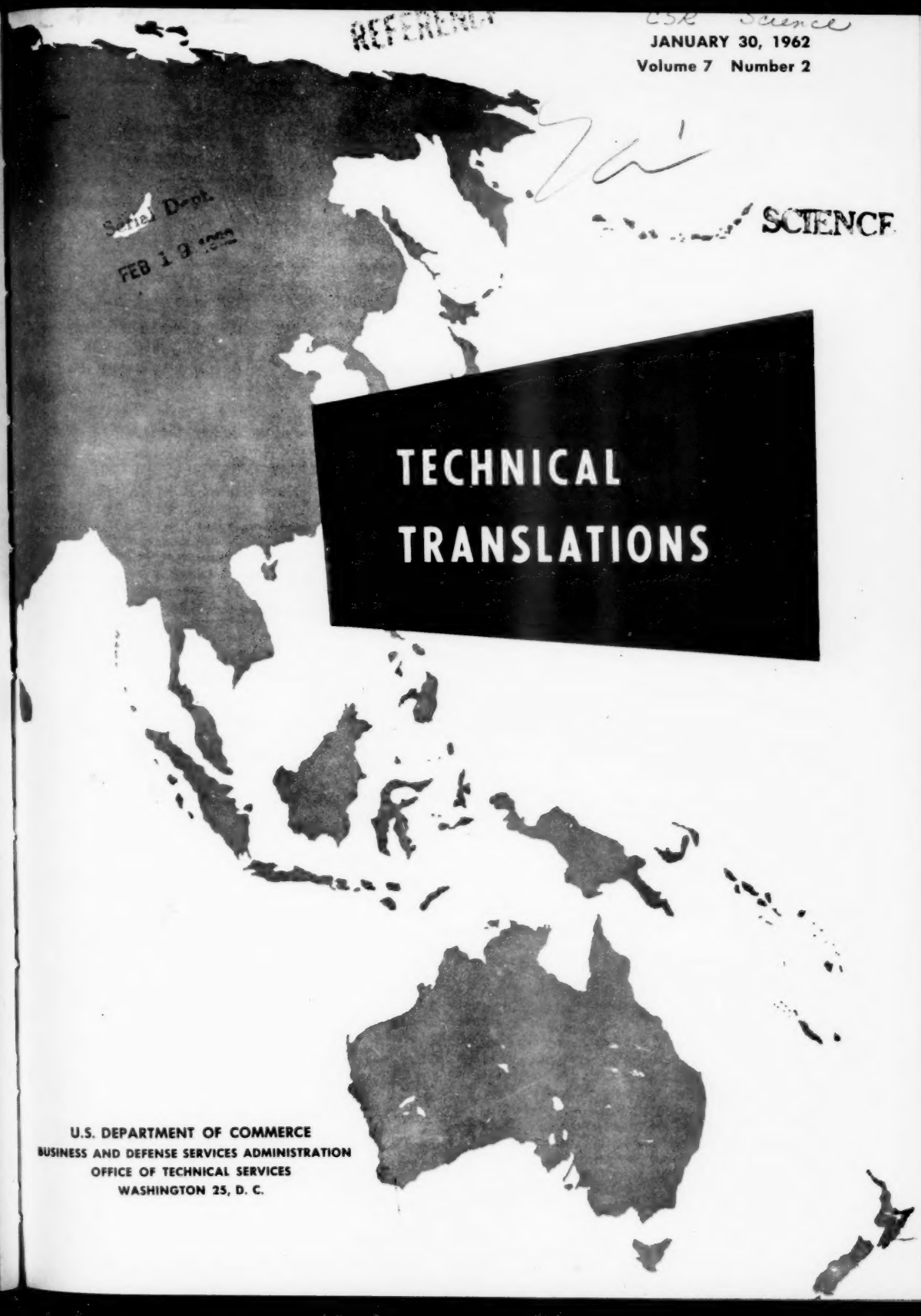

U.S. DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

BUSINESS AND DEFENSE SERVICES ADMINISTRATION

Office of Technical Services
John C. Green, Director

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TECHNICAL TRANSLATIONS

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Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSION. Dec 61, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

Gerasimov, I. P.
THE PROJECT OF THE PROGRAM OF THE STATE SOIL MAP OF THE USSR (Proekt Programmy Gosadarstvennoi Pochvennoi Karty SSSR). [Nov 61] 10p.
PL-480 Agr.
Order from OTS $0.50 60-21848

Trans. of Pochvovedenie (USSR) 1949, no. 10, p. 611-618.

DESCRIPTORS: *Soils, *Agriculture, *Maps, Documentation, Earth.

This paper presents in thesis form the basic principles of the project program and summary scale of conventional symbols for the USSR State soil map, developed at the Dokuchaev Soil Institute.

Korovyakovskii, D. and Sagaev, Sh. S.
NEW PURCHASE PRICES AND DEVELOPMENT OF KOLKHOZ PRODUCTION [AND] ON THE ROAD TO FARM SPECIALIZATION. Soviet Agriculture: Selected Translations no. 60. 2 June 61 [18]p. 11 refs.
JPRS: 8388.
Order from OTS or SLA $1.10 61-23096

Trans. of [Nauchnye Doklady Vysshei Shkoly]. Ekonomicheskie Nauki (USSR) 1960, no. 3, p. 41-51 and Sel'skoe Khozyaistvo Severnogo Kavkaza (USSR) 1960 [v. 3] no. 11, p. 7-8.

DESCRIPTORS: *Agriculture, Economics, Production, Growth, USSR.

Malinovskii, B. A.
SUPPORT TO AGRICULTURAL INSTITUTIONS (Opora Sel'skokhozyaistvennykh Organov). 28 Aug 61, 14p. (3 illus. omitted). Trans. A-1291.
Order from OTS or SLA $1.60 61-28440

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 5, p. 129-133.

DESCRIPTORS: *Agriculture, Economics, *USSR.

The Irkutsk Experimental Station and its work in the Irkutsk-Balagansk forest steppe zone are described.

Polyakov, D. K.
SEASONAL DYNAMICS OF CATTLE DEMODECOSIS AND EXPERIMENTS IN THE TREATMENT OF THIS INVASION, tr. by P. A. Kazakov. [1961] 14p. 11 refs [CSIRO Trans.] 5408.
Order from OTS or SLA $1.60 61-27444

Trans. of Vsesoyuznyi N[auchno]-I[ssledovatel'skii] Institut Veterinarnoi Sanitarii i Ektoparazitologii. Trudy (USSR) 1958, v. 13, p. 107-116.

DESCRIPTORS: *Cattle, Climatic factors, Parasites, *Mites, Skin, Fur, Parasitic infections, Therapy.

Because of its incidence and pathological consequences the damage caused by demodecosis of cattle is second only to the skin bot fly of cattle. In a generalised form the effects are greater than those of any other type of intravitol imperfection of the skin. Seasonal variations are characteristic of the development of D. bovis the causal agent of demodecosis of cattle. They are most active in the spring summer periods. In spring, summer periods sexually mature D. bovis are found on the surface of the animals skin. Manifestation of clinical forms of demodecosis of cattle is observed most frequently in winter-spring and summer periods. This is directly associated with the peculiarities of the causal agents biology. Various treatments of animals (e.g., with a 4% solution of D.D.T. and 2% solution of hexachlorane in solar oil) were ineffective.

Rode, A. A.
THE POSSIBLE ROLE OF PLANTS IN PODZOLIZATION (O Vozmozhnoi Roli Rastitel'nosti v Podzoloobrazovanii). [Nov 61] 23p. 34 refs. PL-480 Agr.
Order from OTS $0.50 60-21841

Trans. of Pochvovedenie (USSR) 1944, no. 4/5, p. 159-179.

DESCRIPTORS: *Plants, *Soils, Decomposition, *Quartz, *Rock, *Geology, *Minerals, *Decomposition Quartz, Gels, Organic acids, Earth.

As the exchangeable bases in the soil are replaced with hydrogen ions, part of the latter enters reversibly and can be replaced with cations of salts. The other part of the hydrogen ions enters irreversibly. In the reversible replacement of hydrogen ions, a partial decomposition of the colloid complex takes place. Repeated changes in the processes of the entry of hydrogen ions and their replacement with basic cations leads to a progressive decomposition of the colloid complex. The root systems of living plants, as they assimilate the bases from the soil, exchange them primarily for H ions that enter the colloidal complex through the entire depth of the rhizosphere. The restoration of the cation equilibrium that takes place between the complex and the soil solution causes a partial disintegration of the complex. Thus, the activity of living roots is the primary cause of this disintegration. The subsequent course of the podzolization process is determined by the character of the salts formed in the plant residues. As soon as organic acids and their salts appear in the course of decomposition of plant residues there is a simultaneous change for the sesquioxides to migrate. This marks the beginning of the podzolization process.

Sakharov, M. K.
POLLINATING ACTIVITY OF BEES ON SEED-BEARING PLANTS IN VEGETABLE CULTIVATION (Ob Opylitel'noi Rabote Pchel na Semennikakh Ovoshchnykh Kul'tur). [Nov 61] 4p. PL-480 Agr.
Order from OTS $0.50 60-51049

Trans. of [Sadovodstvo] (USSR) 1958, v. 96, no. 7, p. 21-23.

DESCRIPTORS: *Vegetables, *Plants, *Agriculture, *Pollen, *Botany.

Correlation is shown between bee pollination and vegetable yields, based on counts of visiting bees and other insects.

Zheltaya, N. N.
SPRING SOAKING OF THE SOIL AS INDEX OF THE MOISTURE RESERVES (Vesennee Promachivanie Pochvy kak Pokazatel' Vlagozapasov) tr. by M. Slade. [1961] [10]p. (foreign text included) 3 refs. [CSIRO] Trans. 5064.
Order from OTS or SLA $1.10 61-28211

Trans. of Meteorologiya i Gidrologiya (USSR) 1958, no. 7, p. 35-38.

DESCRIPTORS: Water supplies, *Soils, Moisture, Agriculture.

Correlations are established between the depth of the spring soaking and the reserves of water in the soaked layer and in the uppermost 1-m layer of soil. Use is made of the results of determinations of the depth of soaking and of the moisture reserves carried out over seven years (1951-1957) on different components of the microrelief of a patchy plain in the northwest of the Caspian lowlands.

Plant Cultivation

Ovodov, I. V.
ALL-UNION CONFERENCE ON THE CONTROL OF SOIL-INHABITING PESTS (NO. 2) (Vtoroe Vsesoyuznoe Soveshchanie po Bor'be s Pochvoobitayushchimi Vreditelyami). 10 Aug 61, 5p. (2 illus. omitted). Trans. A-1288.
Order from OTS or SLA $1.10 61-28438

Trans. of Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1961, v. 6, no. 4, p. 60-61.

DESCRIPTORS: *Agriculture; *Soils, *Pest control, Worms, USSR, Conferences.

Topics are noted of reports that were presented at the conference, which was held at Moscow in Jan-Feb 196' It was reported that in the Dzerzhinsk District (Belorussia) wireworms were controlled (and winter wheat and rye yields were increased) merely by disking.

Prusinkiewicz, Zbigniew.
A COLORIMETRIC FIELD METHOD FOR DETERMINING THE MOISTURE CONTENT OF SOILS AND GROUND (Polowa, Kolorymetryczna Metoda Oznaczania Wilgotnosci Gleb i Gruntow) tr. by W. Sierpinski 1960 [18]p. 26 refs. [PL-480].
Order from OTS $0.50 60-21526

Trans. of Roczniki Nauk Rolniczych. Ser[ia] A: [Roslinna] (Poland) 1954, v. 70, no. 1, p. [77-96].

DESCRIPTORS: *Soils, Moisture, Determination, Colorimetric analysis, *Hydrology.

The method utilizes cobalt chloride dissolved in anhydrous acetone. This solution indicates hygroscopic properties. The general principle of this method depends on adsorption by this solution of the moisture from the examined sample of soil the size of which is determined not by weight but by volume. Water withdrawn from soil combines with $CoCl_2$ molecules as crystallization water, causing the solution to change color (The amount of water in soil may be estimated by comparing the color of the solution with a standard color scale). The method eliminates weighing, which has been considered as one of the most serious shortcomings in field work.

BIOLOGICAL SCIENCES

Antoni, Hans.
ACCIDENTS IN THE GERMAN IRON AND STEEL INDUSTRY IN 1957 (WORKS ACCIDENT STATISTICS) WITH COMPARATIVE DATA FROM THE AMERICAN, BRITISH, JAPANESE, FRENCH AND AUSTRIAN IRON AND STEEL INDUSTRY. [1961] [15]p. 8 refs.
Order from SLA $1.60 61-18783

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 26, p. 1891-1898.
Another trans. is available from BISI £3 15s as BISI-1187 [1960].

DESCRIPTORS: *Industrial medicine, Germany, *Iron industry, *Steel industry, *Accidents, Statistical analysis.

Hubert, Henri, Biloki-Pasquier, G., and Foix, H.
DANGER OF STELLATE INFILTRATIONS IN THE TREATMENT OF TUBERCULOUS HEMOPTYSES. [1961] 3p.
Available on loan from SLA 61-20259

Trans. of la Presse Medicale (France) 1943, v. 51 [no. 11] p. 138-139.

DESCRIPTORS: *Stellate ganglia, Tuberculosis, Therapy, Hemorrhage, Thoracic surgery.

Liu, Lien-chu, Fang, Chin-chüan, and Hu, Ming-hua.
STUDY ON VARIOUS TYPES OF ANOPHELES MINIMUS THEOBALD. 25 Sep 61 [11]p. 4 refs. JPRS: 10276.
Order from OTS or SLA $1.60 61-28753

Trans. of K'un Ch'ung Hsüeh Pao (Chinese People's Republic) 1959, v. 9, no. 2, p. 154-158 and 160.

DESCRIPTORS: *Mosquitoes, China, Insects.

Wild-caught females of A. minimus were examined under dissecting microscope for the following morphological characteristics: measurement of the white and black areas on the antennae, color of the proboscis, size and number of wing spots especially those on the longitudinal veins, pattern of white bands on tarsi, and so on. Larvae collected were examined under dissecting microscope for the morphology and position of number "O" hairs on the 2-7 abdomenal segments. Specimens that were definitely A. minimus were cultured and the morphology of the evolved adults was studied. Wild-caught female A. minimus were separately cultured in the laboratory until they laid eggs. The morphology of the parent female was compared with that of the adults of the next generation. Different types of male A. minimus based on wing spots were studied for any anatomical variation of the genitalia. Wild-caught A. minimus females were classified to types according to the number of wing spots. The different types were examined for possible differences in Plasmodium infection. Specimens of A. minimus collected in Yün-nan were compared with those collected in Szechwan. (Extracted)

Vladimir, G. E.
THE BIOCHEMISTRY OF THE BRAIN (Biokhimiya Mozga). 15 Sep 61 [9]p. JPRS: 10143.
Order from OTS or SLA $1.10 61-28411

Trans. of Zdorov'e (USSR) 1960, v. 6, no. 11, p. 4-5.

DESCRIPTORS: *Brain, *Biochemistry, Physiology, Metabolism.

A popular survey.

Anatomy and Physiology

Helmholtz, H.
ON THE FORM OF THE HOROPTER, DETERMINED MATHEMATICALLY (Uber die Form des Horopters, Matematisch Bestimmt). [1961] [11]p. (foreign text included).
Available on loan from SLA 61-14086

Trans. of Naturh[istorisch]-Med[izinischer] Ver[ein]. Verhandl[ungen] (Germany) 1862/[65] v. 3, p. 51-55.

DESCRIPTORS: *Eye, *Retina, Visual perception, Optical images, Mathematical analysis.

Lyamina, G. M.
THE DEVELOPMENT OF SPEECH AT AN EARLY AGE. 25 Aug 61 [10]p. JPRS: 4920.
Order from OTS or SLA $1.10 61-28063

Trans. of Doshkol'noe Vospitanie (USSR) 1960, no. 9, p. 59-65.

DESCRIPTORS: Children, *Speech, Growth, Training, Vocabulary.

General information is given for nursery school teachers to help them in their job of helping children with their speech development.

Parin, V. V.
APPLICATION OF RADIO-ELECTRONICS TO MEDICINE AND BIOLOGY (Primenenie Radioelektroniki v Meditsine i Biologii). 31 Aug 61 [20]p. JPRS: 10012.
Order from OTS or SLA $1.60 61-28051

Trans. of mono. Elektronika v Meditsine (Electronics in Medicine) Moscow/Leningrad, 1960, p. 19-37.

DESCRIPTORS: *Medicine, *Biology, *Medical research, *Electronics, *Electronic equipment, *Bioelectronics, *Radio equipment, Diagnosis, Instrumentation, Physiology.

A lecture.

Sisakyan, M. M.
BIOLOGICAL PROBLEMS OF SPACE FLIGHTS. GENERAL MEETING OF THE ACADEMY OF SCIENCES USSR. 10 Aug 61, 2p. AID Rept. 61-119.
Order from OTS or SLA $1.10 61-28484

Abstract trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 6, p. 31-40.

DESCRIPTORS: Space medicine, Space capsules, *Space flight, *Closed-cycle ecological systems, Conferences, Physiology.

Basic steps in the Soviet development of space biology are reviewed. Characteristics are given for the "Vostok" cabin. Physiological data on the Gagarin flight are tabulated.

Yarbus, A. L.
PERCEPTION OF AN IMMOBILE RETINAL IMAGE, tr. by E. R. Hope. Mar 61, 3p. 2 refs. DSIS T 352 R.
Order from NRCC mi$1.00, ph$1.50 NRCC C-3660

Trans. of Biofizika (USSR) 1956, v. 1, no. 5, p. 435-437.

DESCRIPTORS: *Visual perception, *Retina, Motion, Optical images, Perception.

Botany

Potlaichuk, V. I.
THE GENUS NIGROSPORA ZIMM., ITS SPECIES COMPOSITION AND TAXONOMIC POSITION (Rod Nigrospora Zimm., Ego Vidovoi Sostav i Sistematicheskoe Polozhenie). [Nov 61] 10p. 5 refs. PL-480 Agr.
Order from OTS $0.50 60-51048

Trans. of Mikrobiologiya (USSR) 1952, v. 21, no. 2, p. 219-225.

DESCRIPTORS: *Fungi, *Parasites, Botany, *Classification.

The fungus species of the genus Nigrospora have specific properties (color, size, location of conidia on conidiophores) which may change depending on nutritional conditions. The most stable properties of the species are: black (or almost black) spores and colorless mycellium, which provide us with a better ground for considering the location of the genus in the family Mucedinaceae as well founded (and not in the family Dematiaceae as is frequently described). Species of the genus Nigrospora can adapt themselves to plant parasitism and to a saprophytic mode of life in the soil. In accordance with the rule of the international nomenclature, the name of the genus Nigrospora Zimm., should be retained, the generic names Basisporium, Acremoniella, Trichosporium, Memnonium, Monotospora and others should be regarded as synonyms. The Basisporium gallarum described by Molliard should be renamed Nigrospora gallarum (Moll.) comb. nova. (Author)

Pyatnitskii, S. S.
THE WINTER OAK AND THE SUMMER OAK (Dub-zimnyak i Dub-letnyak). [Nov 61] 11p. PL-480 Agr.
Order from OTS $0.50 60-21909

Trans. of Priroda (USSR) 1953, v. 42, p. 97-102.

DESCRIPTORS: *Trees, *Forestry, *Plants, *Ecology, Earth, *Economics, Climatic factors

Discussions are presented on the distribution and characteristics of the two types, the origin of the two types, and the importance of both types in forestry.

Shtraukh-Valeva, S. A.
WOUND ROTS OF STEMS OF CAUCASIAN FIR (Ranevye Gnili Stvolov Kavkazskoi Pikhty). [Nov 61] 13p. 14 refs. PL-480 Agr.
Order from OTS $0.50 60-51006

Trans. of Akademiya Nauk SSSR. Institut Lesa. Trudy, 1954, v. 16, p. 336-346.

DESCRIPTORS: *Plants, *Trees, *Fungi, *Pine, *Diseases, Microorganisms, Parasites, *Ecology, Histology

A study was made of the flora of wound rot fungi, and the composition of fungi causing brown rots in Caucasian fir. Isolations were made from 55 specimens, of which 20 yielded mixed cultures of fungi and bacteria, while 12 yielded only bacteria.

Microbiology

Krasil'nikov, N. A.
SOIL MICROORGANISMS AND HIGHER PLANTS, tr. by Y. Halperin. 1961, 474p. 1370 refs. PL-480.
Order from OTS $4.75 60-21126

Trans. of mono. Mikroorganizmy Pochvy i Vysshie Rasteniya, Moscow, 1958.

DESCRIPTORS: *Microorganisms, *Cells (Biology), *Chromosomes, Biological stains, *Polymorphism, Culture media, *Spores, *Bacteria, *Soils, *Plants, Classification, Radioactivation analysis, Adsorption, *Ecology, Biosynthesis, *Nutrition, Antibiotics, *Growth substances, Immunization, Toxicity.

This book is devoted to the problem of the interaction between soil microorganisms and higher plants. The material presented includes basic information on the structure, development, variability and classification of bacteria, actinomycetes and fungi in the light of recent scientific achievements, as well as information on the importance of microorganisms in plant nutrition, the role of micro-activities in the complementary nutrition of plants, the effect of microbes on the vitamin content of plants, their importance in plant development and their influence on soil fertility. In addition, data are given on the importance of antibiotics as a means of therapy and prevention of diseases in agricultural practice. The book is designed for the use of microbiologists, plant physiologists, soil specialists, phytopathologists, mycologists, agrobiologists, and

agronomists. It may also serve as a textbook for students in biological faculties of universities or agricultural and forestry institutes. (Soviet publisher's note)

Slonim, D., Michl, J. and others.
GLASS, RUBBER, STAINLESS STEEL. Pt. 1 of Some Experience with the Preparation of Inactivated Poliomyelitis Vaccine in Czechoslovakia. [1961] 11p.
Order from ATS $20.40 ATS-32N54C

Trans. of Ceskoslov[enska] Epidemiol[ogie] Mikrobiol-[ogie] Immunol[ogie] 1959, v. 8, no. 5, p. 289-298.

DESCRIPTORS: *Poliomyelitis vaccine, Preparation, Czechoslovakia, *Glass, *Rubber, *Stainless steel.

Slonim, D., Michl, J. and others.
PREPARATION OF MEDIA. Pt. 2 of Some Experience with the Preparation of Inactivated Poliomyelitis Vaccine in Czechoslovakia. [1961] 12p.
Order from ATS $19.25 ATS-98N54C

Trans. of Ceskoslov[enska] Epidemiol[ogie] Mikrobiol-[ogie] Imunol[ogie] 1960, v. 9, no. 2, p. 111-121.

DESCRIPTORS: *Polimyelitis vaccine, *Culture media, Preparation, Immunization.

Pharmacology and Toxicology

CHEMICAL RESEARCH REPORTS FROM COMMUNIST CHINA. 26 Sep 61 [80]p. 68 refs. JPRS: 8936.
Order from OTS or SLA $7.60 61-28621

Trans. of [Yao Hsueh Hsueh Pao] (Chinese People's Republic) 1960, v 8 [no. 2] p. 61-64, 66-93, 95-103, 105-108.

DESCRIPTORS: *Chemistry, Scientific research, China, *Atabrine, Titration, *Steroids, *Neoplasms, *Chemotherapeutic agents, Synthesis, *Hypertension, *Schistosomiasis, Therapy, *Drugs, *Antimony, Absorption, *Emetics, *Glucosides, Physiology, Phenyl radicals, *Acetic acids, Acids.

Contents:
Complexometric titration in analysis of organic pharmaceuticals. III. The assay of atebrine and its preparations, by Chou Yuan-yao and others
Study on steroid sapogenins in some Chinese medicinal plants, II, by Wu Chao-hua
Tumour chemotherapy. IV. Synthesis of some aryaliphatic nitroalcohols and nitrostyrenes and their in vitro antitumour activity, by Kao Yee-sheng and others
Pharmacognostical studies of the Chinese drugs pai-ch'ien and pai-wei. 2. Macroscopical and microscopical characters, by Liu Mei-lan and others
Studies on drugs for treatment of hypertension. XI. Therapy with the decoction of clerodendron trichotomum in dogs, by Wang Hsiao-lu and others
Studies on antibilharzial drugs. XXIII. Drug effects on alimentary absorption of S and the promoting effects of bal-glucoside, by Shen Mai-ling and others
A simple method for the preparation of diphenylacetic acid, by Hsu Mou-li and others.

Ogiya, S. and Kataoka, H.
DETERMINATION OF INDIVIDUAL COMPONENTS IN A MIXTURE OF N-GLUCURONIDES OF SULFONAMIDES AND OTHER GLUCURONIC ACID CONJUGATES. Pt. 1 of N-Glucuronides of Sulfonamides. [1961] 7p.
Order from ATS $12.60 ATS-05N55J

Trans. of Yakugaku Zasshi (Japan) 1959, v. 79, no. 7, p. 949-953.

DESCRIPTORS: *Sulfonamides, Glucuronic acid, Acids.

Zakusov, V. V., ed.
RECENT DATA ON THE PHARMACOLOGY AND CLINICAL ASPECTS OF PHENOTHIAZINE DERIVATIVES (Novye Dannye po Farmakologii i Klinike Proizvodnykh Fenotiazinovogo Ryada) tr. by B. Dubinski and others. 1961, 186p. 398 refs. PL-480 HEW.
Order from OTS $2.00 60-21856

Trans. of Akademiya Meditsinskikh Nauk SSSR. Institut Farmakologii i Khimioterapii. Uchenye Zapiski, 1958, v. 1 [191p.].

DESCRIPTORS: *Phenothiazine derivatives, *Pharmacology, Synthesis, Molecular structure, Amines, Neuromuscular transmission, *Chlorpromazine, *Mepazine, Curare, Analgesics, Narcotics, Heart, Blood circulation, Arrhythmia, Antitoxins, Digestive system, Carbohydrates, Metabolism, Hormones, Epinephrine, Insulin, Thyroid hormones, Phosphorylation, Enzymes, Respiration, Tissues, Cytochromes, Surgery, Psychiatry, *Drugs.

Contents:
Synthesis of the phenothiazine series, by A. N. Gritsenko and others
The correlation between chemical structure and pharmacological action in the series of amino derivatives of phenothiazine, by Yu. I. Vikhlyaev
The effect of aminazine and mepazine on the transmission of nervous impulses in some links of the reflex arc, by N. A. Kruglov and D. A. Kharkevich
The effect of aminazine and mepazine on some mechanisms of regulation of motor activity, by N. A. Kruglov
The effect of some derivatives of phenothiazine on the action of curarelike, analgetic and narcotic substances, by N. K. Barkov and others
The effect of phenothiazine derivatives on the cardiac blood supply, by N. V. Kaverina
The effect of derivatives of the phenothiazine series upon some forms of experimental arrhythmia, by Yu. I. Vikhlyaev and N. V. Kaverina
The effect of derivatives of the phenothiazine series on reflexes from the heart, by M. Yu. Ladinskaya
Concerning the aminazine antagonists, by B. I. Lyubimov
The effect of aminazine and mepazine upon the blood picture, by M. F. Runova
The effect of phenothiazine derivatives on the functions of the digestive tract, by E. N. Gorbatova and others
The effect of aminazine and mepazine on carbohydrate metabolism and the activity of certain hormonal preparations, by E. L. Pravotorova and A. V. Smirnova

The effect of mezapine and aminazine upon oxidative phosphorylation and some enzyme systems of tissue respiration, by I. N. Shchelovanova

The effect of phenothiazine derivatives on the inflammatory process, by V. S. Mitrofanov and others

The use of mepazine in the surgical clinic (preliminary report) by S. A. Abubakirova and G. D. Chesnokova

The use of mepazine and aminazine in the psychiatric clinic, by G. K. Tarasov.

Zoology

Arbuzov, S. I.
INFLUENCE OF PARTIAL SYMPATHECTOMY AND VAGOTOMY DURING HIBERNATION IN HETEROTHERMIC ANIMALS, tr. by W. Himel. 23 Aug 51, 8p. (1 fig. omitted) 11 refs.
Order from OTS or SLA $1.10 61-28103

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1950, v. 73, no. 6, p. 1305-1308.
Another trans. is available from SLA as RT-116.

DESCRIPTORS: *Animals, Physiology, *Climatic factors, Body temperature, *Autonomic nervous system, Hedgehogs, *Ganglia, *Hibernation, Sleep, *Vagus nerve.

Observations showed that hibernation of animals with the upper cervical sympathetic ganglia removed sets in at a significantly earlier time than in intact animals. Previous infliction of wounds (without removal of the sympathetic ganglia) is not reflected in the time of the advent of hibernation. In sympathectomized animals, hibernation sets in both at a higher temperature of the environment and at a body temperature which is relatively high for hibernating animals. Hedgehogs with a bilaternal sympathectomy of the upper cervical sympathetic ganglia perish with the lowering of the environmental temperature to 3 or 4°. At the time of hibernation, the body temperature in sympathectomized animals is 1° to 4° lower than in the intact ones. The environmental temperature appears as the basic, decisive factor determining the time of the advent of torpor and of awakening in hibernating heterothermic animals. The awakening of sympathectomized susliks from hibernation appears later than in intact animals and comes at a higher temperature of the surrounding atmosphere. The condition of the sympathetic nervous system to a considerable extent determines the time of the advent of hibernation in heterothermic animals and their awakening from it. (Author)

Petrushevskii, G. K., ed.
PARASITES AND DISEASES OF FISH (Parazity i Bolezni Ryb) tr. by J. I. Lengy, I. Paperna and others. 1961, 338p. 585 refs. PL-480.
Order from OTS $3.50 60-51169

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Ozernogo i Rechnogo Khozyaistva. Izvestiya (USSR) 1957, v. 42 [342p.].
Trans. of p. 304-314 and 330 available from LC or SLA as 60-17592 and 60-17581 respectively.

DESCRIPTORS: *Fishes, *Parasites, *Diseases, Fisheries, *Ecology, *Sanitary engineering, Lakes, *Lampreys, Sturgeons, Salmon

Contents:

Scientific works of the correspondent member of the Academy of Sciences of the USSR, Valentin Aleksandrovich Dogel', on the parasitology of fish, by B. E. Bykhovskii and G. K. Petrushevskii

A survey of works of the laboratory of fish diseases of the All-Union Research Institute of Lake and River Fisheries (VNIORKh) during 25 years, I. Diseases and measures to combat them in ponds and hatcheries, by V. A. Dogel' and G. K. Petrushevskii

The ecology and spreading of the pathogen of trout whirling disease - Myxosoma cerebralis (Hofer, 1903, Plehn, 1905) in the fish ponds of the Soviet Union, by A. V. Uspenskaya

Chilodonella cyprini (Moroff, 1902), its biology and epizootic significance, by O. N. Bauer and N. P. Nikol'skaya

Diseases of carp in fish ponds in Leningrad, Velikie Luki, and Novgorod Oblast's, by O. N. Bauer

Experiments in sanitation of ponds of the Ukrainian Poles'e (forest district) by V. M. Ivasik and A. P. Kholod

On the parasitofauna of young sturgeon bred in the delta of the Volga. I. Diseases of fish in reservoirs, lakes, and rivers, by E. A. Bogdanova

Studies on Monogenea from Tadzhikistan fishes, by B. E. Bykhovskii

The formation of the parasitofauna of fish in the Kutuluk Basin, by A. F. Kosheva

Parasitofauna of fish of "Novoe Vygozero" (New Vygozero Lake) by L. F. Nagibina

Data on the parasitofauna of fish of the region of the future Stalingrad water basin (In the region of the flood-land lakes and Eruslan River) by A. Kh. Akhmerov and E. A. Bogdanova

The parasites of Coregonus lavaretus which have become acclimatized in Sevan Lake, by I. A. Pavlova

The parasitofauna of bream (Abramis brama) of Lake Vbinskoe, by S. D. Tibova

Fish parasites of Lake Ladoga, by A. F. Barysheva and O. N. Bauer

Dynamics of the parasitofauna of the whitefish Coregonus lavaretus from Lake Ladoga and its epizootic importance, by O. N. Bauer and N. P. Nikol'skaya

Fish parasites from Pskov-Chud water reserve, by E. P. Kogteva

The parasitofauna of Lake Vyrts'yarv fish, by R. L. Shlyapnikova

The diseases of White Lake-"Belogo Ozera" fish, by G. K. Petrushevskii

Red pest (Purpura) of carp in Lake Shartash and measures to combat it, by D. G. Shchupakov

Material on the parasitofauna of lampreys from the basins of the Baltic and White Seas, by S. S. Shul'man

#The parasitofauna of the shads from the Black Sea, by G. K. Petrushevskii

Parasites of Coregonus lavaretus baikalensis N. Dubowskii and C. autumnalis migratorius from Lake Baikal. III. Short publications, by E. A. Bogdanova

Material on the parasitofauna of the fry of the Caspian roach from a group of fish-propagating farms in the Volga region, by E. A. Bogdanova

The parasitofauna of young Stenodus leucichthys in the delta of the Volga River, by E. A. Bogdanova

Turbellaria among the spawn of the salmon in fish-breeding farms, by G. K. Petrushevskii

Hydrocoele embryonalis and splitting of the yolk sac in larvae of the Neva salmon, by G. K. Petrushevskii

The pathogenicity of the myxosporidian Myxobolus exiguus in correlation to its epizootics, by S. S. Shul'man

#The myxosporidian Glugea hertwigi Weissenberg in the stint (Osmerus eperlanus m. spirinchus) from Lake Yulya-yarvi, by E. A. Bogdanova

Some data on the effect of helminthic cataract of the eye on the nutritional level of the rainbow trout, by A. V. Uspenskaya

The mortality of tench in the lakes of Lithuanian SSR, by G. K. Petrushevskii

On the parasites of the herring (Clupea harengus membras) by G. K. Petrushevskii

On the parasitofauna of Clupeonella delicatula tscharchalensis and some other fish from Lake Charkhal, by K. V. Smirnova

Concerning Brandt's spotted disease in Ponto-Caspian Amphipoda and Mysidae, by E. A. Bogdanova

The parasites of fish from Lake Pestova and Lake Vel'eo (Novgorod Oblast') by M. N. Pozdnyakova (Vikhrova)

The parasites of Zhizhitsa Lakes fish (Velikie Luki) by S. S. Shul'man

The parasites of fish from Braslav Lakes in Belorussia, by G. K. Petrushevskii and others

Material on the parasites of fish from the Vitim River, by O. N. Bauer.

Rashek, V. A.
EXPERIMENT ON THE ACCLIMATIZATION OF THE CULAN (Opyt Akklimatizatsii Kulana). 10 July 61 [7]p. (1 fig. omitted). Trans. V-1716.
Order from OTS or SLA $1.10 61-28151

Trans. of Priroda (USSR) 1959, v. 48, no. 7, p. 97-99.

DESCRIPTORS: *Ungulates, *Reproduction, Sex, Climatic factors, Aral Sea, Animals, Mammals.

One 5-yr-old male, five 3-yr-old females, one 5-yr-old female, and one 7-yr-old female culans (wild half-asses) were brought to Barsa-Kel'mes island in the northern part of the Aral Sea in 1953 and allowed to live free. One of the females disappeared during the spring thaw of 1954. Until 1958 only one of the remaining females had delivered offspring. Her offspring were a female hybrid delivered in 1955 from an ass who accidentally covered her in 1954, and a full-blooded male delivered in 1956. In 1958 four of the females bore offspring (3 females and 1 male) that developed very well. It is believed that the slow multiplication of the culans up to 1958 was because the semi-free upkeep produced an unfavorable effect on the sex realm of the male.

CHEMISTRY

JOURNAL OF APPLIED CHEMISTRY, 1940, VOL. 13, NO. 10: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 15p. 22 refs.
Order from OTS or SLA $1.60 61-20365

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1940, v. 13, no. 10, p. 1436-1441, 1455-1460, 1464-1469, 1491-1497

DESCRIPTORS: *Chemistry, Abstracting, Preparation, Hydrocarbons, *Carbon compounds, Sulfides, Hydrogen compounds, *Gasoline, *Sulfur compounds, Coal tar, Synthesis, Vinyl radicals, *Ketones, Acetylenes, Methyl radicals, Fuels.

Contents:
Preparation of carbon disulfide from hydrogen sulfide and hydrocarbons. I. The reaction, by E. V. Rakovskii and A. I. Kamneva

Group composition of primary tar gasoline, by I. B. Rapoport

Synthesis of methyl vinyl ketone by hydration of vinylacetylene, by A. N. Churbakov and V. N. Ryazantsev

A new method of group analysis of sulfur compounds in liquid fuel, by A. S. Broun.

JOURNAL OF APPLIED CHEMISTRY, 1940, VOL. 13, NO. 11: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 23p. 30 refs.
Order from OTS or SLA $2.60 61-20399

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1940, v. 13, no. 12, p. 1755-1759, 1804-1809, 1839-1877.

DESCRIPTORS: *Chemistry, Abstracting, *Catalysts, *Zinc compounds, Hydroxides, Oxidation, *Acetylenes, Oils, Hydrogenation, Hydrocarbons, Octenes, Butenes, Styrenes, Dehydration, Porosity, Desulfurization, Gasoline, Kerosene, Catalysis, Acid, Carbinols.

Contents:
Porous carriers for catalysts and sorbents, by E. V. Alekseevskii and V. V. Petrov

Desulfurizing properties of zinc hydroxide, by K. A. Musatov and L. G. Krymova

Catalytic oxidation of acetylene in low concentrations, by V. G. Fastovskii and V. A. Malyusov

Investigation of the aromatic of light oil fractions, by E. A. Robinson

Mechanism of hydrogenation of unsaturated hydrocarbons II. Composition of the octene fraction of the technical dimer of isobutene, by R. Obolentsev

Preparation of styrene by dehydration of methyl phenyl carbinol in the presence of acids, by A. A. Vansheidt and A. V. Kon.

JOURNAL OF GENERAL CHEMISTRY, 1942, VOL. 12, NO. 3/4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 5p. 10 refs.
Order from OTS or SLA $1.10 61-20325

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1942, v. 12, no. 3/4, p. 153-166, 168-179, 206-219.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, *Reaction kinetics, Catalysts, Nickel compounds, Hydrides, *Sodium compounds, Acetates, Hydroxides, *Naphthalenes, Cyclopentanones, Pentanones, Acetones, Anthracenes.

Contents:
Kinetics of catalytic unimolecular reactions carried out by the flow method with consideration of displacement by foreign substances, by A. A. Balandin
Reaction-kinetic method of determination of anisochrony, by A. A. Balandin
Topochemical factors in formation of nickel hydrides, by A. A. Balandin and B. V. Erofeev
Kinetics of interaction of sodium acetate with caustic soda in the molten state, by A. A. Balandin and others
Action of dihydronaphthalenes on cyclones, by B. A. Arbuzov and A. Akhmed-Zade
Piperylcyclone and its derivatives, by B. A. Arbuzov and A. Akhmed-Zade.

JOURNAL OF GENERAL CHEMISTRY, 1942, VOL. 12, NO. 9/10: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p. 9 refs.
Order from OTS or SLA $1.10 61-20328

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1942, v. 12, no. 9/10, p. 433-448, 481-517, 522-524.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, USSR, Aluminum, Oxidation, Sulfuric acid, Acids, Chemical reactions, Methyl red, Phenols, Aldehydes, Resins, Condensation reactions, Alkylation, Organic acids, Hydrogenation, Formaldehyde.

Contents:
Mechanism of anodic oxidation of aluminum in sulfuric acid, by G. V. Akimov and others
Character of conversions of methyl red in the transition region. I. Behavior of methyl red in the two-layer system gasoline aqueous buffer solution at different pH values, by A. G. Koblyanskii
Structure of phenol-aldehyde resins. X. Chemical nature of resinous products of condensation of p-Cresol with formaldehyde, by A. A. Vansheidt and others
Structure of phenol-aldehyde resins. XI. Nature of resinous products of condensation of phenol with formaldehyde, by A. A. Vansheidt and others
Comparative hydrogenation of octadecenic acids, by G. V. Pigulevskii and P. A. Artamonov
Alkylation of phenol. I. Ethylation of phenol, by Z. P. Aleksandrova.

Giborowski, J. and Steplewski, B.
AN INVESTIGATION OF THE CONTINUOUS PROCESS OF SUBLIMATIVE CONDENSATION ON ROTARY CYLINDERS. [1961] 13p.
Order from ATS $18.65 ATS-13N55P

Trans. of Przemysl Chem[iczny] (Poland) 1959, v. [15]38, p. 358-362.

DESCRIPTORS: Sublimation, *Cylindrical bodies, *Rotating structures.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 38, NO. 7: [TABLE OF CONTENTS] AND SELECTED ABSTRACT [1961] 1p.
Order from OTS or SLA $1.10 61-20301

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S. 1943, v. 38, no. 7, p. 232-234.

DESCRIPTORS: *Scientific research, Periodicals, USSR, Charcoal, Electrodes, Preparation, Spectrographic analysis.

Contents:
Charcoal electrodes for quantitative and qualitative spectral analysis, by V. K. Prokof'ev.

Aristarkhoba, M. V., Filippova, E. V. and others.
METHOD AND APPARATUS FOR ANALYSIS OF SMALL AMOUNTS OF HYDROCARBON GASES. [1961] 7p. 3 refs.
Order from OTS or SLA $1.10 61-20352

Trans. of Zavodskaya Laboratoriya (USSR) 1940, v. 9, no. 10, p. 1096-1101.

DESCRIPTORS: *Hydrocarbons, *Gases, Chemical analysis, Vapor pressure, Measurement, Manometers, *Laboratory equipment, Design.

Boulin, R.
CARBON DETERMINATION IN STEELS BY COMBUSTION AND CONDUCTIMETRY. Nov 61.
Order from BISI £3 BISI-2458

Trans. of Chim[ie] Anal[ytique] (France) 1958 [v. 40] Mar, p. 72-76.

DESCRIPTORS: *Carbon, Determination, *Steel, Combustion, Electrical conductance.

Coulombeau, J. and Jaudon, E.
APPLICATION OF THE DUMAS METHOD TO THE DETERMINATION OF TRACES OF NITROGEN IN IRON AND STEEL. Nov 61.
Order from BISI £3 5s BISI-2435

Trans. of Chim[ie] Anal[ytique] (France) 1960, v. 42, Feb, p. 61-68.

DESCRIPTORS: *Iron, *Steel, *Nitrogen, Determination, Chemical analysis.

Ikeda, K., Yasui, E., and Takenoue, A.
A METHOD OF REMOVAL OF SULFUR COMPOUNDS FROM BENZENE. [1961] 4p.
Order from ATS $7.50 ATS-32N55J

Trans. of [puplished] Japanese patent 13674, appl. filed 3 Oct 57, pub. 19 Sep 60.

DESCRIPTORS: *Benzenes, *Sulfur compounds, Separation, Purification.

Horner, L. and Jurgens, E.
QUANTITATIVE DETERMINATION OF ORGANIC PEROXY COMPOUNDS IN MIXTURES. [1961] 8p. 19 refs.
Order from SLA $1.10 61-20648

Trans. of Angew[andte] Chem[ie] (West Germany) [1958] v. 70, no. 9, p. 266-268.
Another trans. is available from ATS $10.65 as ATS-97N53G [1961] 7p.

DESCRIPTORS: *Peroxides, *Organic compounds, Quantitative analysis, Mixtures.

With the aid of phenyl sulfide and triethylarsine in combination with iodometry and acidimetry, dialkyl peroxides, alkyl hydroperoxides, per acids and diacyl peroxides may be quantitatively determined in mixtures. (Author)

Levy, R. and Cousin, B.
THE MICRODETERMINATION OF NITROGEN BY THE DUMAS PROCEDURE. [1961] 10p. (refs. 4 figs. omitted).
Order from SLA $1.10 61-20701

Trans. of Mikrochim[ica] Acta (Austria) [1960] no. 5/6, p. 854-862.

DESCRIPTORS: *Nitrogen, Determination, Microchemistry, Microanalysis, Micrometers.

Operation of the described method permits obtaining the precision of the Pregl standard method in the analysis of types of substances such as: diphenyl amine, 8.28% N; nitroarsanilic acid, 10.69% N; ethyl cyanacetate, 12.38% N; tryptophane, 13.72% N; S-benzyl-thiorium chloride, 13.82% N; sulfanilamide 16.27% N; picric acid, 18.34% N; metanitraniline, 20.28% N; nicotinamide 22.94% N; dinitro-2,4-phenylhydrazone of formaldehyde, 23.52% N; hydrazo-2,2'-bis isobutyronitrile, 33.71% N; thiourea, 36.80% N; and hexamethylene tetramine, 39.97% N. (Author)

Sanin, P. I. and Putsillo, V. G.
INVESTIGATION OF PUTILOVO ASPHALTITE. [1961] 6p. 7 refs.
Order from OTS or SLA $1.10 61-18343

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1944, p. 734-739.

DESCRIPTORS: *Asphalt, *Bitumens, Chemical analysis, USSR.

A sample of asphaltite from the Leningrad province was investigated, and the data correlated with those available for some asphaltites from other sources. This material contains all components which can be isolated from natural asphalts by conventional extraction tests. It is of secondary origin, apparently formed by polymerization of resins without oxidation. A part of the substance from which these resins came could have been converted into petroleum. Migration of bituminous substances of Dictyonemic shales into an upper stratum as an essential step in the formation of asphaltites by further conversion of the migrated bitumen is doubted, and the presence of vanadium in these shales, as well as in asphaltites, is not by itself a valid support of such a theory. (Author)

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 1. 1961, 374p. PL-480.
Order from OTS $3.75 AEC-tr-4449

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 1, p. 3-[235].

DESCRIPTORS: *Radiochemistry, *Chemical analysis, Phase measurement, Radioactive isotopes, Electrostatic precipitators, Potassium compounds, Sulfates, Lanthanum, Cerium, Americium, Potassium, Chlorides, Rubidium compounds, Molecular isomerism, Ion exchange, Rare earth elements, Chromotographic analysis, Sulfuric acid, Perchloric acid, Yttrium, Niobium, Lactic acid, Adsorption, Phosphorus, Chlorine, Sulfur, Charcoal, Colloids, Electrolytes, Uranium, Iron compounds, Hydroxides, Promethium, Technetium, Molybdenum, Carbonyl radicals, Tellurium, Tin, Mercury, Oxalates, Thorium, Zirconium, Nitric acid, Phosphates, Aluminum.

Contents:
Introduction to the publications of the first All-Union Conference on Radiochemistry, by I.E. Starik
The state of microquantities of radioactive elements in liquid and solid phases, by I. E. Starik
The problem of the behavior of natural radioactive isotopes, by V. I. Baranov and others
Coprecipitation of microquantities of substances with crystalline precipitates, by V. I. Grebenshchikova
Coprecipitation of radioactive elements with crystalline precipitates, by M. S. Merkulova
Investigations in the field of anomalous mixed crystals, by E. M. Ioffe
Distribution of the microcomponent between a melt and a crystalline phase, by V. R. Klokman
Determination of the distribution constant of V. G. Khlopin by a method of partial recrystallization of the solid phase, by V. I. Grebenshchikova and R. V. Bryzgalova
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A thermodynamic study of cocrystallization in the system KCl-RbCl-H_2O, by A. P. Ratner, and L. L. Makarov
The limits of applicability of the linear distribution law in salt-water systems with truly isomorphous and isodimorphous components, by G. I. Gorshtein
Ion-exchange sorption of radio elements, by B. P. Nikol'skii
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Application of ion-exchange in the investigation of the substance in solution III: Investigation of forms in niobium which exists in sulfuric and perchloric acid solutions, by V. I. Paramonova and S. A. Bartenev

Ion-exchange chromatographic separation of radioisotopes of rare-earth elements, by A. K. Lavrukhina and others

Application of ion-exchange in the investigation of the substance in solution IV: Study of complex formation of yttrium and lactic acid by the method of "adsorption curves", by V. I. Paramonova and others

The chemical state of radiophosphorus-32, obtained from certain targets upon their irradiation with neutrons, by I. A. Korshunov and A. I. Shafier

Methods of isolation of radiophosphorus from targets containing chlorine and sulfur, by I. A. Korshunov and A. I. Shafiev

Certain peculiarities of chromatographic separation of mixtures of radioactive substances, by M. M. Senyavin and others

Investigation of the salt sorption on oxidized charcoal with radioactive tracers, by D. N. Strazhesko and others

Studies on the coagulation of lyophobic sols by electrolytes, using the method of labelled atoms, by Yu. M. Glazman and others

A practical device for chromatographic separations, by B. K. Preobrazhenskii

Adsorption of microquantities of uranium by iron hydroxides and its desorption by the carbonate method, by I. E. Starik and others

Search for promethium in nature, by A. K. Lavrukhina

State of microquantities of promethium in aqueous solutions, by I. E. Starik and M. S. Lambet

A new method of radiochemical purification of protactinium, by I. E. Starik and L. D. Sheidina

Extraction as a method for separating and studying radioactive elements, by V. M. Vdovenko

Extraction of uranium in the form of aniline uranyl triacetate, by V. M. Vdovenko and L. N. Lazarev

Cerium extraction by tributyl phosphate, by A. V. Nikolaev and others

Extraction method for the separation of technetium from irradiated molybdenum, by M. S. Faddeeva and others

Separation of radioactive isotopes without a carrier, by N. P. Rudenko

The use of carbonyls for the separation of the radioisotopes Cr^{51}, Mo^{99}, W^{187}, Tc^{99m} and Re^{188}, by V. D. Nefedov and M. A. Toropova

The separation of the nuclear isomers of tellurium, mercury and tin, by A. N. Murin and others

Application of the radioautographic method for the control of radiochemical purity of α-radioactive substances, by V. I. Baranov and others

Primary retention in the szilard-chalmers process, by K. Svoboda

The significance of complex compounds in radiochemistry, by A. A. Grinberg

Investigations on the chemistry of uranium and thorium oxalates, by A. A. Grinberg and others

Application of ion-exchange in the investigation of the substance in solution. II. Experimental performance of the method of absorption curves, by V. I. Paramonova

Application of ion-exchange in the investigation of the substance in solution. V. The study of the process of complex-formation by zirconium in nitric acid, by V. I. Paramonova and A. N. Sergeev

Extraction of perchloric acid with tributyl phosphate, by N. S. Povitskii and others

Extraction of perchloric acid and uranyl perchlorate with tributyl phosphate, by V. B. Shevchenko and others

Isolation of technetium-99m without a carrier by the method of disruption of chemical bonds on β-decay, by V. D. Nefedov and M. A. Toropova

Sorption of radioactive isotopes by aluminum hydroxide, by S. A. Voznesenskii and others

Author and subject indexes.

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 2. [Nov 61] 426p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4450

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3, no. 2, p. 241-[551].

DESCRIPTORS: *Chemistry, Periodicals, USSR, Inorganic substances, *Complex compounds, Ions, Platinum compounds, Citric acids, Acids, Ytterbium compounds, Thiocyanates, Salts, Hydrides, Hydroxides, Metals, Chemical reactions, Stability, Physical chemistry, Refraction

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A new method of computing molar refraction, I., by S. S. Batsanov

The hydrides of cerium, by V. I. Mikheeva and M. E. Kost

Study of basic salts and hydroxides of metals, by N. V. Aksel'rud and V. B. Spivakovskii

Comples compounds of bivalent platinum with dimethyl and diethyl sulfides, by S. P. Derendyaev

Ammine complexes of iridium, I., by V. V. Lebedinskii and Z. M. Novozhenyuk

The comparative stability of tartaric acid complexes with aluminum, gallium, indium, and thallium in ammoniacal solutions, by I. V. Pyatnitskii and A. P. Kestyshina

Study of tartaric acid compounds of mercury (II) in solution, by A. S. Tikhonov

Citric acid complexes of ytterbium, by M. M. Senyavin and A. M. Sorochan

Physicochemical studies of complex formation from ions of zinc, cadmium and copper, with sodium citrate in an aqueous medium, by P. K. Migal' and A. Ya. Sychev

Stability of citric acid complexes of some metals, by P. K. Migal' and A. Ya. Sychev

The tetrahydrate of barium diborate $BaB_2O_4 \cdot 4H_2O$, by S. G. Vimba and others

The interaction of elementary boron and certain borides with potassium periodate and potassium iodate, by L. Ya. Markovskii and G. V. Kaputovskaya

Study of thiocyanata complexes of zinc in solution, I, by A. M. Golub and G. D. Ivanchenko

Thiocyanate complexes of manganese, iron, cobalt and nickel, by K. B. Yatsimirskii and V. D. Korableva

The kinetics of oxidation of thiosulfate by hydrogen peroxide in presence of tungstic acid, by K. B. Yatsmirskii and E. F. Naryshkina

The kinetics of oxidation of iodide by hydrogen peroxide in presence of iron(III) compounds, by K. B. Yatsimirskii and G. A. Karacheva

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Ternary systems Na ‖ Cl, SO_4, CO_3 and K ‖ Cl, SO_4, CO_3, by A. G. Bergman and A. K. Sementsova

Ternary systems K_2CL_2 - Na_2SO_4 - Na_2CO_3 and Na_2CL_2 - K_2SO_4 - K_2CO_3, by A. G. Bergman and A. K. Sementova

Investigation of composition of phases, structure and boundaries of homogeneity of phases in the system vanadium - carbon - oxygen, by M. A. Gurevich and B. F. Ormont

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The interaction of potassium titanates and phosphates during crystallization from melts, by I. N. Belyaev and N. P. Sigida

The interaction of sodium titanates and silicates when crystallizing from melts, by I. N. Belyaev and N. P. Sigida

The interaction of potassium and lithium titanates and pyrophsophates when crystallizing from melts, by I. N. Belyaev and N. P. Sigida

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Decomposition voltage of certain compounds of Nb and the separation of Nb from melts by electrolysis, by E. I. Gorovich

Solubility diagrams of binary systems forming supersaturated solutions, by E. I. Akhumov

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Study of the interaction of salts of zinc and ammonia in aqueous medium, by G. G. Urazov and others

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The system Na, Mg ‖ SO_4, HCO_3 - H_2O at 25° and PCO_2 ~1 atm, by Yu. P. Nikol'skaya, and I. A. Moshkina

Study of the cosolubility of uranyl nitrate with the nitrates of alkaline-earth metals in water, by M. A. Yakimov and others

Study of the surface of crystallization of systems H_2O_2 - $NaClO_4$ - H_2O and H_2O_2 - $LiClO_4$ - H_2O, by K. E. Mironov and others

Inclusion of methylene blue in lead nitrate crystals, by G. M. Bliznakov and E. N. Kirkova

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Dependence of the coefficient of crystallization equilibrium on crystal dimensions, by A. N. Kirgintsev

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Scientific institutes of the Chinese People's Republic, by N. P. Luzhnaya

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Author and subject index

Kabanova, O. L. and Palei, P. N.
LES POTENTIELS D'OXYDO-RÉDUCTION DU PLUTONIUM DANS DES SOLUTIONS ACIDES IONIQUES DIFFÉRENTES (Okislitel'no-vosstanovitel'nye Potentsialy Plutoniya v Kislvkh Rastvorakh s Razlichnoi Ionnoi Siloi) tr. by Mme. Boutleroff. 6 June 61 [15]p. (Russian text included) 17 refs. CEA Trans. no. R 1378 (text in French).
Order from OTS or SLA $1.60 61-28678

Trans. in French of #Zh[urnal] Neorg[anicheskoi] Khim[ii] (USSR) 1960, v. 5, no. 1, p. 31-34.

DESCRIPTORS: *Plutonium, Oxidation-reduction reactions, *Hydrochloric acid, *Hypochlorous acid, Acids, Chemical reactions.

Mal'tsev, A. A., Matveev, V. K., and Tatevskii, V. M.
THE NATURE OF THE FLUCTUATION BANDS OF BORIC ACID, tr. by R. P. Illwitzer. 9 May 61, 5p. 15 refs. APL/JHU TG 230-T238.
Order from OTS $0.50 61-31536

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 137, no. 1, p. 123-125.

DESCRIPTORS: *Boric acids, Acids, Spectrographic analysis, Infrared spectroscopy

Boron-salted flames show a green luminescence caused by the so-called "boric acid fluctuation bands," which have previously been ascribed to B_2O_3 molecules, BO and BOH radicals, as well as to H_3BO_3. Spectral analysis indicates that none of these species are responsible but that a BO_2 radical is the agent, as suggested in the authors' earlier (unavailable) paper and also by Kaskan and Millikan (J. Am. Chem. Soc. 32: 1273, 1960). (Applied Physics Lab. abstract)

Markovskii, L. Ya. and Kondrashev, Yu. D.
THE COMPOSITION AND PROPERTIES OF BORIDES OF ELEMENTS OF THE FIRST AND SECOND GROUPS IN THE PERIODIC SYSTEM [O Sostave i Svoistvakh Boridov Elementov Pervoi i Vtoroi Grupp Periodicheskoi Sistemy]. 28 Dec 59 [8]p. 43 refs.
Order from OTS or SLA $1.10 61-20755

Partial trans. of [Zhurnal Neorganicheskoi Khimii] (USSR) 1957, v. 2 [no. 1] p. 34-41.
Complete translations are available from LC or SLA mi$2.40, ph$3.30 as 60-17904, CTS-589, Dec 58 [20]p. and from OTS $3.75 in AEC-tr-4051, 1960, 357p.

DESCRIPTORS: *Alkali metal compounds, *Lithium compounds, *Borides, Chemical properties, Synthesis, Physical chemistry.

Plaksin, L. N., Sinel'nikova, A. L., and Beilin, A. Yu.
USE OF ANION EXCHANGE RESINS FOR THE REGENERATION OF CYANIDE FROM COMPLEX SALTS. [1961] 4p.
Order from ATS $6.00 ATS-96N54R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138, no. 6, p. 1399-1401.

DESCRIPTORS: *Cyanides, Salts, *Ion exchange resins, Resins, Complex compounds, Regeneration.

Rubio, Vicente Iranzo.
A NEW METHOD FOR THE PREPARATION OF MONOBARIUM ORTHOPHOSPHATE. [1961] 11p. 2 refs.
Order from SLA $1.60 61-18649

Trans. of Sociedad Española de Fisica y Quimica. Anales, 1943, v. 39, p. 743-750.

DESCRIPTORS: *Barium compounds, *Phosphates, Synthesis, Carbonates, Chemical reactions.

A new method of the preparation of $Ba(H_2PO_4)_2$ is described, which starts out with barium carbonate; the results of the analysis of the obtained product are presented. (Author)

Organic Chemistry

POLYMERIC BASIC ALUMINUM SALTS OF ORGANIC ACIDS. 1960, 750 words.
Order from TTIS $4.50 TTIS-2238

Trans. of Swiss patent 347,641, appl. 24 Sep 56, pub. 31 Aug 60, claiming 6 Oct 55 (Neth.) by Kon. Industrielle Mj.

DESCRIPTORS: *Aluminum compounds, *Organic acids, Condensation reactions, Polymers.

Balandin, A. A. and Patrikeev, V. V.
CARBON DEPOSITION IN THE DECOMPOSITION OF ETHYLBENZENE ON METAL SURFACES AND THE STUDY OF THIS PROCESS BY MEANS OF A PHOTOELEMENT. [1961] [2]p. 2 refs.
Order from OTS or SLA $1.10 61-16668

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1942, v. 34, no. 3, p. 88-92.

DESCRIPTORS: *Benzenes, *Ethyl radicals, Decomposition, *Metals, Surface properties, *Carbon deposits, Deposits, Photoelectric cells.

A method of determination of the kinetics of carbon formation in catalytic reactions at elevated temperatures is reported, the applicability of which was demonstrated in the case of decomposition of ethylbenzene on an iron surface, for which data are available previously obtained by the authors by a different method. In testing the method under report a polished metal plate was kept in the reaction space and the rate at which the amount of light from an electric bulb reflected from this plate diminished as the surface of the plate became covered with carbon was measured with the aid of a photoelectric cell. In agreement with previous observations, it was found that decomposition of ethylbenzene liberating carbon on an iron surface is an autocatalytic reaction preceded by an induction period and decreasing with rise of the temperature within 450 and 650°. Carbon deposition in this case is not promoted by copper, but is facilitated by the presence of unsaturated hydrocarbons in mixture with ethylbenzene. (Author)

Bier, G., Lehmann, G., and Leugering, H. J.
BLOCK POLYMERS FROM ETHYLENE AND PROPYLENE. [1961] 9p.
Order from ATS $9.75 ATS-37N53G

Trans. of Makromol[ekulare] Chem[ie] (Switzerland) 1961, v. 44/46, p. 347-357.

DESCRIPTORS: *Polymers, Preparation, Ethylenes, Propenes.

Dornow, Alfred and Rombusch, Konrad.
SYNTHESES OF NITROGEN CONTAINING HETEROCYCLICS. XIX. ATROPISOMERISM (ENANTIOMORPHISM) IN A BI-1, 2, 3-TRIAZOLE COMPOUND. [1961] 4p. (experimental part omitted) 8 refs.
Order from SLA $1.10 61-20657

Trans. of Chemische Berichte (West Germany) 1958, v. 91, p. 1851-1854.

DESCRIPTORS: *Heterocyclic compounds, *Nitrogen, Synthesis, *Azoles, *Carboxylic acids, Acids, *Isomeric transitions, Optics, Racemization.

A dicarboxylic acid of the bi-1, 2, 3-triazole series was separated into its enantiomorphs. The optical activity is explained by the hindrance to the free rotatability of the two triazole rings. (Author)

Dornow, Alfred and Rombusch, Konrad.
SYNTHESES WITH ACETYLENE COMPOUNDS. V. CONCERNING THE PREPARATION OF BI-1, 2, 3-TRIAZOLES. [1961] 6p. (experimental part omitted) 19 refs.
Order from SLA $1.10 61-20656

Trans. of Chemische Berichte (West Germany) 1958, v. 91, p. 1841-1846.

DESCRIPTORS: *Azoles, Synthesis, *Acetylenes, Chemical reactions.

Elagina, N. V. and Zelinskii, N. D.
CYCLOHEXYL-CYCLOHEPTYL-METHANE AND ITS CATALYTIC DEHYDROGENATION. [1961] 1p. 3 refs.
Order from OTS or SLA $1.10 61-18332

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1941, v. 30, no. 8, p. 728-731.

DESCRIPTORS: *Methanes, Cyclohexanes, Dehydrogenation, Catalysts, Catalysis

Dehydrogenation of a representative of compounds containing a 7-member and a 6-member ring is reported. Cyclohexylcycloheptylmethane boiling at 220° C. was synthesized. Dehydrogenation over platinized carbon gave benzylcycloheptane. This is thought to be isomerized into phenylcyclohexylethane. Dehydrogenation of the latter compound produces diphenylethane and further phenanthrene. (Author)

Freidlin, L. Kh., Balandin, A. A., and Fridman, G. A.
REACTIVITY OF HALOGENOBENZENES IN CATALYTIC HYDROLYSIS IN THE VAPOR PHASE. [1961] 8p. 20 refs.
Order from OTS or SLA $1.10 61-18888

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk, Izvestiya, 1945, p. 655-663.

DESCRIPTORS: *Halogen compounds, *Benzenes, Hydrolysis, Silicon compounds, Dioxides, Gels, Catalysts, Catalysis, Chlorides.

Comparative experiments of hydrolysis of halogenobenzenes with steam in the presence of silica gel and of silica gel impregnated with cupric chloride showed that the reactivity of these halides decreases in the following order: $C_6H_5Cl > C_6H_5Br > C_6H_5I > C_6H_5F$. In the temperature interval studied (400-550°), the curves showing the change of the velocities of conversion of chloro- and bromobenzene with temperature run parallel. The hydrolysis of these halides is effectively promoted by the above catalysts, especially by the promoted silica gel, and bromobenzene is more sensitive to the promoting effect of copper than chlorobenzene. The iodo- and fluorobenzenes do not undergo extensive vapor phase hydrolysis. A rise of the temperature exerts almost no accelerating effect on the reaction and the catalysts tested also fail to materially increase the reaction velocity. Thus, the cheapest of the halogenobenzenes, i.e., chlorobenzene, is also the most advantageous starting material for the manufacture of phenol from the standpoint of the yield. (Author)

Grechkin, N. P. and Arbuzov, A. E.
SYNTHESIS OF POLYNUCLEAR HYDROCARBONS FROM BENZANTHRONE. [1961] [1]p. 8 refs.
Order from OTS or SLA $1.10 61-18014

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie de[s] Sciences de l'U. R. S. S. [1941] v. 32, p. 50-52.

DESCRIPTORS: *Hydrocarbons, Synthesis, *Benzanthrone, Anthrones, Magnesium compounds, Bromides, Chemical reactions, Pyrolysis.

Synthesis is reported of two new pyrene hydrocarbons. Benzanthrone was reacted with orthotolymagnesium bromide and methylnaphthylmagnesium bromide giving 4-orthotolylbenzanthrone and 4-(2'methyl-1'-naphthyl)-benzanthrone. These were pyrolyzed at 400-410° giving 3:4,6:7-dibenzopyrene and 3:4-naphtho-6,7-benzopyrene, respectively. (Author)

Lanin, V. A. and Pronina, M. B.
ORGANIC SUBSTANCE OF BITUMINOUS SHALES. [1961] 6p. 8 refs.
Order from OTS or SLA $1.10 61-18884

Condensed trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1944, p. 745-751.

DESCRIPTORS: *Shales, Oxidation, Permanganates, Potassium compounds, Chemical reactions, Organic acids, Carbon dioxide.

Two samples of shale were investigated, one from the Gdov deposit, the other from the Volga deposits, with a carbon-to-hydrogen ratio of 8.26 in the first sample and 8.8 for the second. The samples were oxidized with potassium permanganate and among the products large amounts of carbon dioxide and acetic, oxalic and succinic acids were found in the case of the first sample, but in the case of the Volga sample adipic, phthalic, benzenetricarboxylic, -tetracarboxylic and -pentacarboxylic acids were also found. The results are interpreted in the sense that Gdov shale is free of humic substances and is a purely sapropelic formation, while Volga shale is of sapropelic-humic origin. (Author)

Lau, Hans H.
PRINCIPLES OF CONFORMATION ANALYSIS. [1961] 25p. (24 figs. omitted) 165 refs.
Order from SLA $2.60 61-20579

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73, no. 12, p. 423-432.

DESCRIPTORS: *Organic compounds, Ethanes, Hexanes, Cyclohexanes, Cyclohexanones, Hexanones, *Stereochemistry, Isomers, Molecular structure, Electron diffraction analysis, Dipole moments, Thermodynamics, Spectrographic analysis.

Lemetre, G. and Caprara, G.
PHENOL BY DIRECT OXIDATION OF BENZENE. [1961] 14p.
Order from ATS $16.80 ATS-42N55I

Trans. of Ann[ali di] Chim[ica] (Italy) 1960, v. 50, p. 83-98.

DESCRIPTORS: *Phenols, *Benzenes, Oxidation, Chemical reactions.

Majewski, J.
RECTIFICATION OF SULFONATION PHENOL IN INDUSTRY. [1961] 10p.
Order from ATS $17.80 ATS-03N55P

Trans. of Przemysl Chem[iczny] (Poland) 1960, v. [16]39, no. 10, p. 599-603.

DESCRIPTORS: *Phenols, *Sulfonates.

Mishina, A.
GAMMA RADIATION-INDUCED GRAFT POLYMERIZATION OF ACRYLAMIDE ONTO AMYLOSE IN AN AQUEOUS SOLUTION. [1961] 8p.
Order from ATS $16.00 ATS-58N55J

Trans. of Nihon Nogei-Kagaku Shi (Japan) 1961, v. 35, no. 1, p. 40-45.

DESCRIPTORS: *Acrylamides, Gamma rays, Radiation effects, Polymer solutions, Polymerization.

Nazarov, I. N. and Bergel'son, L. D.
ACETYLENE DERIVATIVES. 108. SYNTHESIS OF POLYCYCLIC COMPOUNDS RELATED TO STEROID. V. COMPLETE SYNTHESIS OF THE STEREOISOMER 15-METHYL ANDROSTENDIONE [Proizvodnye Atsetilena. Soobshchenie 108] tr. by Z. Knowles. 13 July 51, 30p. (refs. omitted).
Order from OTS or SLA $2.60 61-28016

Trans. of #Zhurnal Obshchei Khimii (USSR) 1950, v. 22, no. 4, p. 648-660.

DESCRIPTORS: *Acetylene derivatives, *Polycyclic compounds, Synthesis, *Steroids, Methyl radicals, Androstene, Isomers, Ketones.

A complete synthesis was realized of the stereoisomer $\Delta^{8,9}$- methylandrosten-3, 17-dione, and a common method for the synthesis of the steroid compounds of the androstane series was worked out. (Author)

Nazarov, I. N., Terekhova, L. N., and Bergelson, L. D.
ACETYLENE DERIVATIVES. 109. SYNTHESIS OF POLYCYCLIC COMPOUNDS RELATED TO STEROID. IV. COMPLETE SYNTHESIS OF THE ISOMER 15-METHYL ANDROSTEN-3, 17-DIONE WITH THE METHYLCYCLOPENTANE RING B [Proizvodnye Atsetilena. Soobshchenie 109] tr. by Zelda D. Knowles. 19 July 51, 23p. (refs. omitted).
Order from OTS or SLA $2.60 61-28017

Trans. of #Zhurnal Obshchei Khimii (USSR) 1950, v. 22, no. 4, p. 661-670.

DESCRIPTORS: *Acetylene derivatives, *Polycyclic compounds, Synthesis, Steroids, Methyl radicals, Androstene, Isomers, Cyclopentanes, Pentanes, Ketones
A complete synthesis was realized on an acetylene base of steroid diketone, which is an isomer of 17-methylan-drostendione with methylcyclopentane ring B. A number of the intermediate products of this synthesis were described. (Author)

Nazarov, I. N.
CHEMISTRY OF VINYLETHYNYLCARBINOLS. [1961] 37p. 74 refs.
Order from OTS or SLA $3.60 61-20131

Trans. of Uspekhi Khimii (USSR) 1945, v. 14 [no. 1] p. 3-41.

DESCRIPTORS: *Carbinols, *Vinyl radicals, Acetylenes, Condensation, Synthesis, Polymerization, Dehydration, Hydrogenation, Isomeric transitions, *Hydrocarbons, Ethers, Ketones, Diene synthesis, *Ethynyl radicals.

A review of this field is made, covering 60 references, for the most part studies by the author and his collaborators and dealing with synthesis of these carbinols, their physical constants, dehydration to hydrocarbons of the divinylacetylene series, their esterification, preparation and physical constants of their ethers, condensation with phenols to vinylacetylenyl phenols and preparation of their methyl ethers, condensation to vinylisocoumarans and diene synthesis of cyclohexenylethynylcarbinols, the constants of some of which are tabulated. The mechanism of stepwise hydrogenation of vinylethynylcarbinols depends upon the catalyst used and in the presence of nickel and palladium olefinic alcohols with different positions of the double bond are obtained. Isomerization of vinylethynylcarbinols and of their halogen derivatives, hydration of divinylacetylenes to vinyl allyl ketones and polymerization of vinylethynylcarbinols are further discussed. The partly polymerized vinylethynylcarbinols possess an exceptional binding power and on subsequent polymerization serve as permanent adhesives for a variety of materials, including plastics, marble, glass, wood, ebonite, etc. (Author)

Niebergall, H.
PRODUCTION OF ADDITION POLYMERS WITH PHOSPHORUS, SILICON AND OXYGEN IN THE MAIN CHAINS. 1960, 750 words.
Order from TTIS $4.50 TTIS-2236

Trans. of Germany patent 1,086,897, appl. 17 Oct 58, pub. 11 Aug 60.

DESCRIPTORS: *Polymers, Production, *Phosphorus, *Silicon, *Oxygen, Molecular structure, *Silanes.

Niebergall, H.
PRODUCTION OF ADDITION POLYMERS WITH TIN, SILICON AND OXYGEN IN THE MAIN CHAINS. 1960, 750 words.
Order from TTIS $4.50 TTIS-2237

Trans. of German patent 1,087,810, appl. 17 Oct 58, pub. 25 Aug 60.

DESCRIPTORS: *Polymers, Production, *Tin compounds, *Oxygen, *Silicon, *Silanes, Molecular structure.

Nikolaeva, A. F., Tatevskii, V. M. and Frost, A. V.
CATALYTIC [ACTION] OF [ACTIVE] ALUMINOSILICATES. IV. CONVERSION OF CYCLOHEXENE OVER ACTIVATED CLAY. [1961] 4p. 7 refs.
Order from OTS or SLA $1.10 61-20146

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 796-798.

DESCRIPTORS: Aluminum compounds, Silicates, Catalysts, *Cyclohexenes, *Clays, Chemical reactions, Hydrocarbons, Catalysis.

It was established that the action of aluminosilicates on cyclohexene differs in its mechanism from the action of metals, which bring about an irreversible catalytic conversion, as described by N. D. Zelinskii. The absence of benzene in the light fractions of the products indicates that the hydrogen needed for the formation of cyclohexane and methylcyclopentane from cyclohexene is supplied by the products of polymerization under the action of clays and that hydrogen disproportionation under the influence of activated aluminosilicates occurs in a manner not identical with that by which hydrogen disproportionation takes place in the presence of metals. (Author)

Okawara, Makoto, Onishi, Yoshio, and Imoto, Eiji.
SYNTHESES OF POLYVINYLTHIOPHENOLS. Rept. no. 5 of Studies on the Syntheses and Reactions of Functional High Molecular Compounds; [Paper] lectured at the Annual Conference of the Chemical Society of Japan (no. 12) Apr 59. [1961] 13p. 8 refs.
Order from SLA $1.60 61-18676

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 1, p. 226-228.

DESCRIPTORS: *Polymers, Vinyl radicals, *Thiols, *Phenols, Synthesis, Ion exchange, Measurement.

With polystyrene (PS) as the raw material, synthesis of polyvinylthiophenol was conducted by the following three methods: (1) PS was chlorosulfonated, then was reduced with tin-hydrochloric acid; (2) PS was nitrated, reduced, and diazotized, and the diazonium salt was hydrolyzed as xanthate; and (3) PS was converted to the sulfide with 2,4-dinitrophenylsulfenyl chloride, then was alcoholyzed. The high molecular thiols obtained were measured for their ion-exchange adsorptive capacity (g) for Ag and Hg^{2}. The apparent E value of the sample obtained by method (1) (Ag^{+} 5.70, Hg^{2+} 6.28 meg/g) was appreciably greater than those in the cases of (2) and (3), and this was probably because the effect of the co-present SO_3H groups had added on. There was no constant relationship between the SH % and E due to the influence of co-present groups and difficulty of purification, but in the case of (3), where the steps were few, a proportional relationship was seen in any case. (Author)

Parini, V. P., Kazakova, Z. S. and others.
POLYMERS WITH A SYSTEM OF CONJUGATED BONDS AND WITH HETERO ATOMS IN THE CONJUGATION CHAIN. Pt. 12 of Preparation and Properties of Some Poly(Aminoquinones). [1961] 7p.
Order from ATS $9.00 ATS-51N53R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 3, p. 402-407.

DESCRIPTORS: *Polymers, *Chemical bonds, Molecular structure, Quinones, Amines.

Petrov, A. D.
DEPENDENCE OF THE ANTIKNOCK PROPERTIES AND POUR POINTS OF DIESEL FUEL HYDROCARBONS UPON THEIR STRUCTURE. [1961] 8p. 14 refs.
Order from OTS or SLA $1.10 61-20108

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1946 [no. 4] p. 543-554.

DESCRIPTORS: *Fuel oil, *Hydrocarbons, Synthesis, Molecular structure, Antiknock, Oils.

Previously published and newly obtained data on the synthesis and evaluation of antiknock properties and pour points of hydrocarbons with from 10 to 26 carbon atoms in the molecule were used to compile tables for over 70 hydrocarbons revealing the changes in these properties of aliphatic and cyclic hydrocarbons with growth of the molecular weight and with changes of the structure of the compound in question. The most advantageous structural types of low pour point components of Diesel aviation fuels have been established by correlating antiknock properties, pour points, viscosities, spontaneous ignition temperatures and other properties of the hydrocarbons of different classes and structural types. (Author)

Renckhoff, G. and Steneberg, H. A.
PROCESS FOR THE PREPARATION OF PURE PENTACHLOROPHENOL. [1961] 3p.
Order from ATS $5.30 ATS-40N56G

Trans. of German patent 1,080,565, appl. 14 June 56, pub. 13 Oct 60.

DESCRIPTORS: *Phenols, *Chlorine compounds, Preparation.

Shvartsman, A. G.
GLUCOSIDE FROM LEAVES OF RHODODENDRON FLAVUM DON, tr. by Zelda D. Knowles. 3 Nov 52, 10p. 15 refs.
Order from OTS or SLA $1.10 61-28099

Trans. of Zhurnal Obshchei Khimii (USSR) 1941, v. 11, no. 5/6, p. 467-470.

DESCRIPTORS: *Glucosides, *Quercetin, Sources.

From the leaves of Rhododendron flavum was isolated $C_{21}H_{20}O_{12}$, which belongs to the flavone group. A study of glucoside revealed that it is quercetin-3-glucoside. (Author)

Tsuji, W., Kitamaru, R. and others.
GRAFT POLYMERIZATION OF VINYL MONOMERS ONTO POLYVINYL ALCOHOL FIBERS. [1961] 9p.
Order from ATS $14.40 ATS-56N55J

Trans. of Kogo Kagaku Zasshi (Japan) 1960, v. 63, no. 9, p. 1527-1530.

DESCRIPTORS: *Vinyl alcohol, Polymerization, Polymers, Alcohols, *Synthetic fibers, *Fibers.

Weslau, Hermann.
THE PROBLEM OF CHAIN-LENGTH DISTRIBUTION IN THE STEP-WISE METALLOORGANIC SYNTHESIS. [1961] 14p. 10 refs.
Order from SLA $1.60 61-20504

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 198-206.

DESCRIPTORS: *Metalorganic compounds, *Ethylenes, *Aluminum compounds, *Alkyl radicals, Synthesis, Chain reactions, Displacement reactions, Statistical distributions.

It is shown how one must calculate the distribution of chain lengths for the "growth reaction" as per K. Ziegler and coworkers; and, namely (1) in the limiting case of the pure growth (or in the case of the ideal two-step α-olefin synthesis with growth and displacement consecutively), (2) in the limiting case of the pure catalytic course of the α-olefin synthesis (i.e., with growth and displacement side by side), and (3) in the real case of the overlapping of (1) and (2). (Author)

Ziegler, Karl.
ORGANOMETALLIC SYNTHESIS OF HIGHER ALIPHATIC COMPOUNDS FROM LOWER OLEFINS IN PRACTICE AND IN THEORY. [1961] [30]p. 63 refs.
Order from SLA $2.60 61-20688

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, no. 22, p. 829-835.
Another trans. is available from ATS $22.80 as ATS-21N49G [1961] 14p.

DESCRIPTORS: *Metalorganic compounds, *Ethylenes, *Aluminum compounds, *Alkyl radicals, Synthesis, Chain reactions, Displacement reactions.

Physical Chemistry

JOURNAL OF PHYSICAL CHEMISTRY, 1940, VOL. 14, NO. 4: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 4p.
Order from OTS or SLA $1.10 61-20349

Abstract trans. of Zhurnal Fizicheskoi Khimii (USSR) 1940, v. 14, no. 4, p. #461-493, 554-557, 562-570, 582-588.
#Complete translations of p. 461-493 are available from SLA as RT-405, RT-404, and RT-409.

DESCRIPTORS: *Physical chemistry, Abstracting, Periodicals, USSR, Hydrocarbons, Molecules, Spectrographic analysis, Foams, Stability, Liquids, Pressure, Gases, Hydrogen.

Contents:
#Vibration spectra of hydrocarbon molecules. I. Methods of study of valency oscillations, by M. A. El'yashevich
#Vibration spectra of hydrocarbon molecules. II. Frequencies of valency oscillations of the hydrocarbon chain of paraffins, by B. I. Stepanov
#Vibration spectra of hydrocarbon molecules. III. Approximate method of determination of oscillations of the groups CH, CH_2 and CH_3, by M. A. El'yashevich
Stability of elementary foam, by P. F. Pokhil
Pressure of saturated vapor of two volatile liquids miscible in all proportions, II., by N. D. Litvinov
Regular solutions of gases in liquids. I. Regular solutions of hydrogen, by M. G. Gonikberg.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1940, VOL. 29, NO. 1: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 3p.
Order from OTS or SLA $1.10 61-20386

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1940, v. 29, no. 1, p. 22-31, 36-40, 44-47.

DESCRIPTORS: Scientific research, USSR, *Hydrocarbon, Molecules, Adsorption, *Organic compounds, Colors, *Benzenes, *Ethyl radicals, Dehydrogenation, Catalysts, *Styrenes, Synthesis, *Metals, Corrosion, *Ethanol, Chemical reactions

Contents:
Horizontal orientation and solvation of molecules in adsorption layers, by A. B. Taubam
Contribution to the problem of color of organic compounds, by F. S. Shifrin
Catalytic conversions of ethylbenzene, by S. R. Sergienko
Corrosion of metals by non-aqueous solutions: Action of ethyl alcohol on metals, by L. G. Gindin and others

Archangelskii, D. N., Rogovin, Z. A., and Konkin, A. A.
EFFECT OF CONCENTRATION AND NATURE OF ACIDS AND SULFATES USED ON THE SAPONIFICATION RATE OF CELLULOSE XANTHATE. Communication 1 of Investigations on the Process of Viscose Fiber Formation. [1961] [12]p. 12 refs.
Order from OTS or SLA $1.60 61-18828

Trans. of Khim[icheskie] Volokna (USSR) 1959, no. 4, p. 23-26.

DESCRIPTORS: *Cellulose, *Xanthic acids, Hydrolysis, Sulfuric acid, Hydrochloric acid, Phosphoric acid, Acids, Sulfates, Chemical reactions, Precipitation.

A method has been developed for determining the effect of the components in the precipitating bath on the saponification rate of cellulose xanthate. The rate of the saponification of cellulose xanthate was studied by using solutions of sulfuric, hydrochloric and phosphoric acids of various concentrations. It was established that the saponification rate of cellulose xanthate increases up to a certain point with increased acid concentration and then decreases. The saponification rate of cellulose xanthate with 3 N sulfuric acid in the presence of different amounts of sodium, ammonium and zinc was studied. It was found that, by adding sulfate to the bath, the rate of saponification of cellulose xanthate with sulfuric acid slows down. The specific effect of zinc sulfate in correlation with the decreased saponification rate of cellulose xanthate during the formation of viscose was also determined.

Bares, J., Cerny, C. and others.
COLLECTION OF PROBLEMS IN PHYSICAL CHEMISTRY. Sep 61, approx 480p.
Order from PP $10.50

Trans. of unidentified Czechoslovakian mono. (University textbook) n. p., n. d.

DESCRIPTORS: *Physical chemistry, Quantum mechanics, Atomic structure, Kinetic theory, Reaction kinetics, Gases, Thermodynamics, Liquids, Solids, Phase studies, Chemical equilibrium, Electrochemistry, Molecular structure, Physical properties, Colloids, Surface properties, Czechoslovakia.

Bockris, J. O'M.
CHANGES OF THE REACTION VELOCITY BETWEEN AN ELECTRODE AND A SOLVENT. [1961] [13]p. [refs. omitted].
Order from SLA $1.60 61-18908

Trans. of Journal de Chimie Physique (France) 1952, v. 49, p. C41-C46.

DESCRIPTORS: *Organic solvents, *Electrodes, Chemical reactions, Velocity, Electrodeposition.

A lecture.

Centola, G.
PHENOMENA ACCOMPANYING THE TRANSFORMATION OF THE CELLULOSE CRYSTAL LATTICE. [1961] 8p.
Order from ATS $12.50 ATS-75N531

Trans. of Ind[ustria della] Carta (Italy) 1959, v. 13, no. 12, p. 141-145.

DESCRIPTORS: *Cellulose, Crystal structure, Lattices, Cellulose chemistry, Transformations.

Cerchez, Vasill and Radulescu, Tuda.
DISPERSION OF METALLIC HYDROXIDES IN MINERAL OILS AND THEIR DETERGENT PROPERTIES. [1961] [5]p. 5 refs.
Order from SLA $1.10 61-20745

Trans. of Chem[ische] Tech[nik] (East Germany) 1960, v. 12, no. 4, p. 187-188.

DESCRIPTORS: *Detergents, Preparation, Materials, *Mineral oils, Oils, *Metallic compounds, *Hydroxides, Colloids, Physical properties.

Chiusoli, G. P.
ADDITION REACTIONS OF THE ALLYL GROUP: SYNTHESIS OF β-PROPIONIC COMPOUNDS. [1961] 11p. 6 refs.
Order from SLA $1.60 61-18690

Trans. of la Chimica e l'Industria (Italy) 1961, v. 43 [no. 4] p. 365-368.

DESCRIPTORS: Italy, *Allyl radicals, Synthesis, *Acroleins, *Acrylonitriles, Hydrogen, Reagents, Acrylic acids, Esters, Propionic acids, Chemical reactions, Alcohols, Temperature, Thiourea, Hydrolysis, Molecular structure, Microchemistry, *Chlorides Carbon compounds, Nickel compounds, Monoxides, Carbonyl radicals, Towers (Chemistry), Spectrographic analysis, *Acrylic acid esters

Reactions are described between allylic chloro derivatives and acrylic compounds, such as acrylic acid, acrylic esters, acrolein, acrylonitrile. The products derive from the combination of the allyl residue of the chloro derivative with the acrylic compound and with hydrogen. A possible reaction mechanism is discussed. (Author)

Evseer, A. M. and Pozharskaya, G. V.
DETERMINATION OF HEAT OF VAPORIZATION OF MANGANESE. [1961] [7]p. 3 refs.
Order from OTS or SLA $1.10 61-28233

Trans. of Moscow U. vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fizika, Khimii] (USSR) 1959, v. 14, no. 1, p. 165-169.

DESCRIPTORS: *Manganese, Metals, *Vaporization, Thermochemistry, Vapor pressure.

The heat of vaporization at 298°K was determined to be 70.0 ± 0.2 kcal/mole.

Grube, G. and Speidel, H.
INFORMATION ON SiO. I. THE SEPARATION FORMS OF SiO FROM THE VAPOR PHASE (Zur Kenntnis des Siliciummonoxyds. I. Die Abscheidungsformen des Siliciummonoxyds aus der Dampfphase). [1961] [8]p. (foreign text included) 5 refs.
Order from SLA $1.10 61-20271

Trans. of Zeitschrift für Elektrochemie (West Germany) 1949, v. 53 [no. 6] p. 339-340.

DESCRIPTORS: *Silicon compounds, *Monoxides, Chemical analysis, X-ray diffraction analysis, Phase studies.

Hartman, Helmut, Hofmann, Wilhelm, and Gerhard, S.
OXYGEN DETERMINATION IN ZINC AND MAGNESIUM. [1961] (refs., 2 tables omitted).
Order from SLA $1.10 61-20692

Trans. of Z[eitschrift für Metallk[unde] (Germany) 1958, v. 49 [no. 9] p. 461-463.

DESCRIPTORS: *Zinc, *Magnesium, Chemical analysis, *Oxygen, Determination.

The procedure is based on $ZnO + H_2S = ZnS + H_2O$. Hydrogen sulfide was conducted over the zinc melt at 550° with hydrogen as carrier. The water which is formed is caught in a U-shaped absorption tube with

phosphor pentoxide and weighed. In this manner oxygen content between 0.0004 and 0.0006% was determined for various types of zinc in compact form. Results show that the determination of O_2 in metallic magnesium is made in the same way as in zinc. (Author)

Ito, Y. and Kobayashi, E.
AMMONIUM NITRILOSULFONATE. [1961] 6p.
Order from ATS $12.30 ATS-44N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1956, v. 59, no. 2, p. 148-151.

DESCRIPTORS: *Ammonia, *Sulfonates, *Nitriles, Reaction kinetics.

Ito, Y.
EFFECT OF PRESSURE, TEMPERATURE, TIME AND MOISTURE ON THE HIGH PRESSURE SYNTHESIS OF AMMONIUM SULFAMATE. [1961] 5p.
Order from ATS $7.00 ATS-50N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1954, v. 57, no. 11, p. 800-801.

DESCRIPTORS: *Ammonium radicals, *Sulfamates, Synthesis, Moisture, Temperature, Time, Reaction kinetics.

Ito, Y. and Kobayashi, E.
FORMATION OF AMMONIUM NITRILOSULFONATE IN THE GAS PHASE REACTION BETWEEN AMMONIA AND SULFUR TRIOXIDE. [1961] 8p.
Order from ATS $17.10 ATS-46N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1957, v. 60, no. 10, p. 1262-1265.

DESCRIPTORS: *Ammonia, *Sulfonates, *Nitriles, Sulfur compounds, Oxides, Ammonium radicals, Reaction kinetics.

Ito, Y., Masuda, E., and Kobayashi, E.
MANUFACTURE OF AMMONIUM SULFATE BY THE GAS PHASE REACTION OF AMMONIA, SULFUR TRIOXIDE AND WATER. [1961] 6p.
Order from ATS $10.30 ATS-45N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1957, v. 60, no. 10, p. 1260-1262.

DESCRIPTORS: *Ammonium radicals, *Sulfates, Synthesis, *Ammonia, *Sulfur compounds, Oxides, Water.

Ito, Y.
SYNTHESIS OF AMMONIUM SULFAMATE UNDER PRESSURE. [1961] 7p.
Order from ATS $10.30 ATS-49N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1954, v. 57, no. 11, p. 797-800.

DESCRIPTORS: *Ammonium radicals, *Sulfamates, Synthesis.

Ivanov, K. I., Savinova, V. K., and Mikhailova, E. G.
PEROXIDE COMPOUNDS OF ISOPROPYL ETHER. I. PHOTOOXIDATION OF ISOPROPYL ETHER AND THE CHARACTER OF PEROXIDES FORMED. [1961] 5p. 18 refs.
Order from OTS or SLA $1.10 61-20177

Trans. of Zhurnal Obshchei Khimii (USSR) 1946, v. 16, p. 65-70.

DESCRIPTORS: *Propyl ethers, *Peroxides, Hydrogen compounds, Oxidation, Boiling, Oxides, Ultraviolet radiation, Light, Photochemistry, Photochemical reactions.

The action of ultraviolet light accelerates formation of peroxides in autoxidation of isopropyl ether. Autoxidation of isopropyl ether forms three types of peroxides: hydrogen peroxide, a very small amount of a light organic peroxide distilling below 30° under 1 mm pressure and a large amount of a heavy peroxide which does not boil at the above temperature and pressure and constitutes the principal peroxide product formed in the initial stage of oxidation of this ether. (Author)

Kalinichenko, I. I., Nikitin, V. D. and others.
DISSOLUTION OF NICKEL IN NITRIC ACID. Feb 60 [12]p. (5 figs. omitted). [DSIR LLU] M 3160.
Order from OTS or SLA $1.60 61-27508

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1959, v. 4, no. 11, p. 2443-2448.

Portions of this report will not reproduce well.

DESCRIPTORS: *Nitric acid, Solvent action, *Nickel, Solubility, Temperature, *Nitrates, *Hydrogen compounds, *Peroxides, *Ammonium radicals, Oxygen.

An experimental study was made of the effect of temperature and the introduction into the reactive medium of oxygen, hydrogen peroxide, and ferric and nickel nitrates on the rate of dissolution of nickel in nitric acid. During dissolution of nickel in nitric acid at 40°, 60°, 80°, and 100°C and acid concentrations between 0.46 and 7 N, ammonia forms 90% of the products of reduction of nitric acid. At higher acid concentrations the products of reduction of the nitrate ions may consist of both ammonia and nitrogen oxides. Introduction into the reactive medium of oxygen and ferric and nickel nitrates does not affect the amount of ammonium salts formed. Introduction of hydrogen peroxide reduces the amount of ammonium salts 2 to 3 times.

Kleinberg, A. V. and Terenin, A. N.
DISSIPATION OF VIBRATION QUANTA AND QUENCHING OF NITRIC OXIDE FLUORESCENCE. [1961] 5p.
Order from ATS $8.00 ATS-86N53R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1955, v. 101, no. 6, p. 1031-1034.

DESCRIPTORS: *Vibration, Scattering, *Nitrogen compounds, *Oxides, *Fluorescence.

Morozova, L. P. and Krotova, N. A.
STUDY OF THE NATURE OF THE ADHESION BOND IN THE BONDING OF TWO HIGH-MOLECULAR COMPOUNDS. 4 Jan 60 [29]p. 14 refs.
Order from OTS or SLA $2.60 61-16704

Trans. of #Kolloid[nyi] Zhurnal (USSR) 1958, v. 20, no. 1, p. 59-66.
Another trans. is available from CB $7.50.

DESCRIPTORS: *Polymers, *Bonding, *Adhesion, Rupture, Adhesives, Metals, Glass, Secondary emission, Electrical properties.

An experimental study was made of the formation of the adhesion bond when two high-molecular materials are bonded and the relative role of the electric and diffusion processes in the adhesion phenomena. In the case of adhesion of a polymer to metal or of a polymer to glass, the adhesion bond has an electrical character, which is shown by the form of the adhesion diagram, by the presence of electron emission on rupture and by the residual electrical charge on the disrupted surfaces. After the rupture, the polymer film continues to emit electrons and shows a negative residual electrical charge. The base (glass, metal) does not emit electrons and shows a positive electrical charge. On rupture of the adhesion bond of two polar polymers of different structure or of a polar and non-polar polymers, the same characteristic peculiarities can be observed as on the rupture of a polymer from glass or metal. On the microscopic preparations a sharp interfacial boundary is observed. The determination of the velocities of the electrons emitted during the process of rupture shows that the disruption of a strong adhesion bond is accompanied by the emission of electrons which have higher velocities than the electrons emitted during the disruption of a weak bond In the case of adhesion of two nonpolar polymers of closely similar structure, the formation of the adhesion bond is determined by diffusion processes in the contracting zone.

Nikitin, V. M.
EFFECT OF CADMIUM ON DEHYDRATION OF ETHANOL OVER ALUMINA. [1961] 4p. 4 refs.
Order from OTS or SLA $1.10 61-20126

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 273-276.

DESCRIPTORS: *Ethanols, Decomposition, *Cadmium compounds, Nitrates, Chemical reactions, Dehydration, *Aluminum compounds, Oxides, Dehydrogenation, Catalysts.

Decomposition of ethanol over alumina with an admixture of cadmium nitrate was studied. Addition of 1 mole cadmium nitrate to 60 moles alumina causes conversion of the latter from a dehydrating catalyst to a dehydrogenating catalyst, and with a larger amount of cadmium present the character of conversion of alcohol changes to dehydrogenation. Alumina acts in this case as a carrier which increases the activity of cadmium. Acetaldehyde resulting from dehydrogenation undergoes a number of conversions, as indicated by the complexity of the condensate obtained. (Author)

Pihlstrand, F.
ABSORPTION AND EVOLUTION OF HYDROGEN IN IRON AT HIGH TEMPERATURES. Sep 61.
Order from BISI £3 BISI-2224

Trans. of Jernkontoret [Stockholm]. Ann[aler](Sweden) 1937, v. 121, no. 5, p. 219-231.

DESCRIPTORS: *Iron, *Hydrogen, Absorption, Temperature, Solubility.

Rolla, L. and Iandelli, A.
THE LANTHANUM-ZINC SYSTEM. Pt. 1 of Contributions of the Knowledge of Rare Earth Metals and Their Alloys. [1961] 10p.
Order from ATS $16.35 ATS-65N55I

Trans. of Ricerca Sci[entifica] (Italy) 1941, v. 20, p. 1216-1226.

DESCRIPTORS: *Lanthanum, *Zinc, Rare earth elements, Rare earth metals, Alloys.

Romankov, P. G., Lepilin, V. N., and Nemet, E. S.
ADSORPTION IN A FLUIDISED BED, tr. by L. J. Goodlet. Nov 60 [21]p. 23 refs. AWRE/Trans/13; [DSIR LLU] M. 2832.
Order from OTS or SLA $2.60 61-23342

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1956, v. 1, p. 317-324.

DESCRIPTORS: *Fluidised solids, Adsorption.

A relationship is established between the coefficient of mass transfer and the fundamental influencing factors of the adsorption process in a fluidised bed. Equations are derived which can be used to calculate the useful volume of adsorbers of the tubular type as well as the duration of the protective action of a fluidised bed of an adsorbent. Shilov's equation is given a new form, for the case of a fluidised bed, and is analysed and explained.

Rösinger, Sigurd.
DOSIMETRY OF X-RAYS AND HIGH ENERGY ELECTRONS WITH AN AQUEOUS FERROUS SULFATE SOLUTION. [1961] [12]p. 45 refs.
Order from SLA $1.60 61-20264

Trans. of Zeitschrift für Physikalische Chemie [Frankfurt] (West Germany) 1957, Neue Folge, v. 10, p. 310-322.

DESCRIPTORS: *X-rays, *Electrons, *Dosimeters, *Iron compounds, *Sulfates, Radiochemistry.

Timofeev, D. P.
THE RATE OF DESORPTION. [1961] [6]p. 4 refs. [NCB] Trans. A. 1703/SEH; [DSIR LLU] M. 2577.
Order from OTS or SLA $1.10 61-23288

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958, v. 32, no. 11, p. 2483-2486.

DESCRIPTORS: *Charcoal, *Benzenes, *Vapors, Adsorption.

The experimentally determined rate of desorption of organic vapor from a layer of activated charcoal ventilated by a current of pure air is compared with the rate of desorption calculated on the assumption that external diffusion takes place rapidly.

Schmahl, N. G. and others.
EQUILIBRIUM INVESTIGATIONS ON MAGNESIO-WUSTITES AND MAGNESIO-FERRITES. Oct 61.
Order from BISI £ 4 BISI-2411

Trans. of Arch[iv fur das] Eisenhut[tenwesen] (West Germany) 1961, v. 32, May, p. 297-302.

DESCRIPTORS: *Magnesium compounds, *Iron compounds, Chemical equilibrium, Phase studies, Wustite, Oxygen, Magnesium compounds, Carbon compounds, Oxides.

Uchida, S. and Ito, Y.
GAS-PHASE REACTION BETWEEN AMMONIA AND SULFUR TRIOXIDE. Pt. 3 of Anhydrous Reaction Between Ammonia and Sulfur Trioxide. [1961] 6p.
Order from ATS $9.25 ATS-67N54J

Trans. of Tokyo Kogyo Shikensho Hokoku (Japan) 1952 v. 47, p. 258-263.

DESCRIPTORS: *Ammonia, *Sulfur compounds, *Oxides, Chemical reactions, Reaction kinetics.

Uchida, S., Ito, Y., and Kobayashi, E.
PROPERTIES OF THE PRODUCTS OF ANHYDROUS REACTIONS BETWEEN AMMONIA AND SULFUR TRIOXIDE AND THEIR DERIVATIVES, PTS. 2-3. [1961] 9p.
Order from ATS $11.65 ATS-47N54J

Trans. of [Nihon] Kagaku Zasshi (Japan) 1954, v. 75, no. 7, p. 741-746.

DESCRIPTORS: *Ammonia, *Sulfur compounds, *Oxides.

Uchida, S. and Ito, Y.
THE REACTION BETWEEN AMMONIA AND SULFUR TRIOXIDE AT LOW TEMPERATURES. Pt. 6 of Study of the Anhydrous Reaction Between Ammonia and Sulfur Trioxide. [1961] 4p.
Order from ATS $6.00 ATS-43N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1954, v. 57, no. 2, p. 105-106.

DESCRIPTORS: *Ammonia, *Sulfur compounds, Oxides, Temperature.

Uchida, S., Ito, Y., and Kobyashi, E.
SULFURIC ACID TREATMENT OF THE REACTION PRODUCT OF NH_3 WITH SO_3 FOR THE PREPARATION OF SULFAMIC ACID. Pt. 5 of Study of the Anhydrous Reaction Between Ammonia and Sulfur Trioxide. [1961] 6p.
Order from ATS $9.50 ATS-42N54J

Trans. of Kogyo Kagaku Zasshi (Japan) 1954, v. 57, no. 1, p. 18-20.

DESCRIPTORS: *Sulfuric acid, *Ammonia, Sulfur compounds, Oxides, *Sulfamic acids, Preparation, Reaction kinetics.

Uchida, S., Ito, Y., and Masuda, E.
VAPOR-PHASE REACTION BETWEEN AMMONIA AND CONVERTER GAS FROM CONTACT TYPE SULFURIC ACID MANUFACTURE. Pt. 4 of Anhydrous Reaction Between Ammonia and Sulfur Trioxide. [1961] 8p.
Order from ATS $13.60 ATS-66N54J

Trans. of Tokyo Kogyo Shikensho Hokoku (Japan) 1952, v. 47, p. 264-269.

DESCRIPTORS: *Ammonia, *Sulfur compounds, Sulfuric acid, Acids.

Vetyukov, M. M., Blyushtein, M. L., and Poddymov, V. P.
VAPOR TENSION AND FUSION DISSOCIATION IN THE $NaF-AlF_3$ SYSTEM. [1961] [10]p. 12 refs.
Order from OTS or SLA $1.10 61-27880

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1959, v. 2, no. 6, p. 126-132.

DESCRIPTORS: *Sodium compounds, *Aluminum compounds, *Fluorides, Salts, Vapor pressure, Dissociation, Electrolysis.

By the dynamic method the gross vapor tension of fusions of the $NaF-AlF_3$ system was determined. On the basis of the type of vapor tension isotherm and vaporization temperature curve as well as certain other properties of these fusions views are expressed on the existence of an $NaAlF_4$ in the liquid phase. It is shown that a mixture of the $Na_3AlF_6-AlF_3$ salts in the solid and fusion states not only volatilizes as such but is subject to appreciable dissociation by the action of oxygen and moisture of the air. (Author)

Wicke, E., Klüssner, A., and Otto, K.
CATALYTIC TRANSFER OF HYDROGEN TO HYDRIDE-FORMING METALS. [1961] 12p. 2 refs.
Order from SLA $1.60 61-20020

Trans. of International Catalysis Conference (no. 2) [held at] Paris, 1960. [Proceedings] sect. 1, preprint no. 48.

DESCRIPTORS: *Metals, *Hydrides, Uranium, Palladium, *Hydrogen, Absorption, Catalysts, Catalysis, Reaction kinetics.

In all metal-hydrogen systems at low temperatures a kinetic hindrance of the setting up of the equilibrium at the phase boundary has been observed. As a series of characteristic cases could show, this kinetic hindrance can be eliminated by bringing the metal surface into contact with metal hydrides. The catalytic hydrogen transfer through several metal hydrides to palladium as well as the catalysis of formation of uranium hydride were investigated reaction kinetically. Possible applications of this effect are indicated. (Author)

EARTH SCIENCES

Climatology and Meteorology

Budyko, M. I., ed.
CONTEMPORARY PROBLEMS IN METEOROLOGY OF THE SURFACE LAYER OF THE ATMOSPHERE: A SYMPOSIUM [LISTING OF PAPERS PRESENTED] AND FOREWORD [OF PROCEEDINGS] tr. by George S. Mitchell and others. June 61 [6]p.
Order from OTS or SLA $1.10 61-27776

Trans. of mono. Sovremennye Problemy Meteorologii Prizemnogo Sloya Vozhdukha: Sbornik Statei, Leningrad, 1958, table of contents and foreward.

DESCRIPTORS: *Atmosphere, *Meteorology, Symposia.

Evseev, P. K.
RELATION OF ATMOSPHERIC PRECIPITATIONS TO TOTAL RADIATION, EVAPORATION AND ABSOLUTE HUMIDITY (Svyaz' Atmosfernykh Osadkov s Summarnoi Radiatsiei, Ispareniem i Absolyutnoi Vlazhnost'yu). [Nov 61] 7p. 6 refs. PL-480 Agr.
Order from OTS $0.50 60-51028

Trans. of Meteorologiya i Gidrologiya (USSR) 1958, no. 10, p. 18-23.

DESCRIPTORS: *Precipitation, *Evaporation, *Humidity, Solar energy, Clouds, Thermal radiation, Meteorology.

Data indicate that the formation of cumulo-nimbus precipitations takes place in a close interaction of air masses with the underlying surface of the region of fallout. Nimbo-stratus precipitations depend entirely on the intensity of cyclonic circulation. (Author)

Mertsalov, A. N.
AIR COOLING AND CONDENSATION DURING HEAT ADVECTION (Okhlazhdenie Vozdukha i Kondensatsiya pri Advektsii Tepla) tr. by Richard M. Holden. Mar 61 [6]p. 2 refs. AmMetSoc-T-R-352+; AD-262 393.
Order from OTS or SLA $1.10 61-28169

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 11, p. 58-60.

DESCRIPTORS: Meteorological data, Precipitation, Dew point, Temperature, *Heat transfer, Correction, *Condensation, Atmosphere, Cooling, Tables.

Sheremetevskaya, O. I.
CALCULATION OF EVAPORATION AND HEAT EXCHANGE WITH ALLOWANCE FOR THE STRATIFICATION OF AIR MASS (Uchet Stratifikatsii Vozdukha v Raschetakh Ispareniya i Teploobmena) tr. by M. Slade. [1961] [18]p. (foreign text included) 22 refs. [CSIRO] Trans. no. 5281.
Order from OTS or SLA $1.60 61-28645

Trans. of Meteorologiya i Gidrologiya (USSR) 1960, no. 9, p. 16-20.

DESCRIPTORS: *Sea water, *Atmosphere, Heat transfer, Evaporation, Turbulence, *Meteorology, Mathematical analysis.

A simplified method of calculating evaporation and heat exchange from ordinary shipboard observations is derived from an analysis of experimental data on the vertical distribution of the meteorological elements above different seas by means of the theory of turbulent mixing developed by Monin and Obukhov (Akad. Nauk SSSR. Geofiz. Inst. Trudy 24(151): 163-187, 1954; available in translation from LC or SLA as 59-19097). The equations $E = 7.6\ v_1 \Delta_1$ and $p = 0.22\ v_1(t_{a_1} - t_w)$ are derived. Here E represents the rate of evaporation, in mm/month; v_1 the wind velocity at the 1-m level; Δ_1 the moisture deficit, in mm, at the 1-m level; and p is the rate of heat exchange in kcal/cm^2 month.

Temnikova, N. S.
METHODS OF INVESTIGATING MICROCLIMATE (O Metodakh Izucheniya Mikroklimata). [Nov 61] 7p. 7 refs. PL-480 Agr.
Order from OTS $0.50 60-51018

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 5, p. 45-48.

DESCRIPTORS: Agriculture, Climatic factors, Meteorology, *Micrometeorology, Corrections, *Climate, USSR.

Geodesy

Bocharov, M. K. and Nikolaev, S. A.
METHODS OF MATHEMATICAL STATISTICS IN CARTOGRAPHY. [1961] [230]p. 121 refs. ACIC G-4.
Order from OTS or SLA $15.00 61-28847

Trans. of mono. Matematico-Statisticheskie Metody v Kartografii, Moscow, 1957, 158p.

DESCRIPTORS: Maps, Map reading *Mapping, *Statistical analysis, Statistical distributions, Distribution, *Sampling, Measurement, Roads, Inland waterways, Mountains, Urban areas, Rural areas, Beaches.

Mathematical statistics makes it possible to reveal numerous connections among the phenomena depicted on geographic maps, to measure them, and to provide quantitative evaluations thereof. It assists in the proper solution of problems of cartographic representation of various phenomena. This manual presents an

effort to illuminate these questions in terms of the major elements to be found on general geographic maps. The book consists of three chapters. Chapter 1 provides the rationale for the desirability of applying the methods of mathematical statistics to cartography. Chapter 2 is a review of the fundamentals of mathematical statistics to the degree necessary for the understanding of the basic content of the book, which is contained in its third chapter. Chapter 3 sets forth in brief some of the results of investigation of certain features of maps by the methods of mathematical statistics. (Extracted)

Masibroda, V. E.
FROM THE HISTORY OF CHINESE CARTOGRAPHY (Iz Istorii Kitaiskoi Kartografii). 7 Sep 61 [35]p. 15 refs. JPRS: 10061.
Order from OTS or SLA $3.60 61-28295

Trans. of Voprosy Geografii (USSR) 1958, no. 42, p. 178-188.

DESCRIPTORS: *Mapping, China.

Monin, I. F.
THE THEORY OF THE GRAVITATIONAL FIELD OF A REGULARIZED EARTH. 18 Sep 61 [8]p. MCL-1341/1+2. AD-264 515
Order from OTS or SLA $1.10 61-28498

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1960, no. 3, p. 57-61.

DESCRIPTORS: *Earth, *Gravity, Theory.

Under the assumption that the reference surface is a nonlevel sphere near and external to the regularized geoid and that its center coincides with the earth's center of inertia, the following formulas are derived: (1) the inverse of Stokes' formula, (2) the inverse of the Vening Meinesz formula, (3) the Kallandro formula and (4) the formula for the second radical derivative $\partial^2 W/\partial \rho^2$. The inverse of the Stokes formula is also derived under the assumption that its center does not coincide with the earth's center of inertia.

Geology

HYDROGEOLOGY AND ENGINEERING GEOLOGY, 1959, NO. 1: SELECTED ARTICLES. 29 Sep 61 [38]p. 8 refs. JPRS: 10303.
Order from OTS or SLA $3.60 61-28861

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 1, p. 33-46 and 48.

DESCRIPTORS: *Hydrology, *Geology, China, Soils, Permeability, Boreholes, Determination, Minerals, Mining engineering, Design.

Contents:
Careful analysis and comprehensive research must be carried out on hydrogeological conditions of mineral areas, by Wang Hsi-en
A discussion of several problems of designing a sand-fill structure, by Ko Yu-li
A special slide rule for laboratory use to compute the coefficient of permeability of clayey soil, by Jung Ching-lin
How to choose the radius of a bore hole when carrying out experimental calculations in hydrogeology, by Liu Hsia.

TRANSACTIONS OF THE INSTITUTE OF GEOLOGY FOR ORE DEPOSITS, PETROGRAPHY, MINERALOGY AND GEOCHEMISTRY. [1959] no. 28: [SELECTED ARTICLES]. [1961] 223p. (figs. tables omitted).
Order from OTS or SLA $15.00 61-19564

Trans. of [Akademiya Nauk SSSR. Institut Geologii Rudnykh Mestorozhdenii, Petrografii, Mineralogii i Geokhimii. Trudy, 1959] no. 28, p. 5-137 and 142-148ff.

DESCRIPTORS: *Geology, *Geochemistry, *Minerals, *Ores, *Deposits, Salts, Selenium, Uranium, Garnet, Tin, Lead, Ethylenedinitrilo tetracetates, Acetates, Sodium, Complex compounds, Radiochemistry.

Contents:
Some problems of the geochemistry of the catagenesis in sedimentary deposits of the "cuprous sandstones" type, by A. I. Perelman
Outlines of the geochemistry of salts; geochemical diagrams of salt deposits, by K. M. Feodot'ev
The problems of a mineralogy and geochemistry of certain sedimentary uranium ore occurrences, by I. G. Chentsov
Selenium in the Paleogene deposits of Central Asia, by I. G. Chentsov
The paragenetic associations of admixture elements in garnets of a different genesis, by A. S. Dudykina
Paragenetic associations of the admixture-elements in cassiterites of various genetic types of tin ore deposits, by A. S. Dudykina
The isotopic composition of ore-lead and the age of the minerals which contain U, Th and Pb on the basis of mass-spectometric and X-ray spectral data, by K. I. Narbutt and others
The entering of uranium into certain rock-forming minerals, by I. G. Chentsov
Use of the ethylenediamintetra-acetate of sodium (Trilon B) in a radiochemical analysis, by S. G. Tseitlin

Lipman, R. Kh.
COMPOSITION OF MICROFAUNA OF NUMMULITIC LAYERS OF CAPE IZENDY-ARAL ON THE NORTHERN SHORE OF THE ARAL SEA (Sostav Mikrofauny Nummulitovykh Sloev Mysa Izendy-Aral na Severnom Beregu Aral'skogo Morya). 11 Aug 61, 9p. 5 refs. Trans. V-1721.
Order from OTS or SLA $1.10 61-28441

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 138, no. 3, p. 651-654.

DESCRIPTORS: Aral Sea, Beaches, *Aquatic animals, Microganisms, *Paleoecology, USSR.

Yao, T'ieh-shan.
SUMMARY OF HYDROGEOLOGICAL CONDITIONS FOR MA-TSUNG MOUNTAIN (NORTH MT.) AREA OF KANSU. 13 Oct 61 [9]p. JPRS: 10524.
Order from OTS or SLA $1.10 61-28789

Trans. of Shui Wen Ti Chih Kung Ch'eng Ti Chih (Chinese People's Republic) 1959, no. 6, p. 22-24.

DESCRIPTORS: *Mountains, *China, Hydrology, Geology, Geography, Surface properties.

The Ma-tsung Mountain area is situated far in the interior, and the weather is dry and cold with sparse rainfall and snowfall. This area belongs to the extreme interior semi-desert weather area. Jurassic and partial igneous rocks have crevice water. At the edge of the basin and the foothill near the contact face of the Quaternary and the Ku-lao rock formation, there always is capillary-crevice water, little in quantity and not ideal in quality, but in arid areas it is still useful for the medium and small size industry and for domestic supply. All capillary-crevice water areas have red willow trees, reeds, and So-so trees, and can be used as guides for locating the water. At the center of the basin there are large quantities of capillary water at shallow depth, but it is poor in quality and high in mineral content; consequently it is not suitable for use. In conformance to existing surface conditions, the ground water movement is very slow in the entire area. (Author)

Oceanography

Ho, Ch'ung-pen and Jen, Yun-wu.
SOME PROBLEMS CONCERNING HYDROGRAPHIC INVESTIGATIONS IN SHALLOW SEA. 29 Sep 61 [17]p. 6 refs. JPRS: 10307.
Order from OTS or SLA $1.60 61-28787

Trans. of [Hai Yang Yu Hu Chao] (Chinese People's Republic) 1959, v. 2, no. 1, p. 1-9.

DESCRIPTORS: *Hydrographic surveying, China, Oceanography.

Consideration is given to daily, diurnal, and temporary variations.

Soskin, I. M.
SALT EXCHANGE THROUGH THE DANISH STRAITS AND ITS INFLUENCE ON MULTIANNUAL FLUCTUATIONS OF SALINITY IN THE BALTIC SEA (Soleobmen Cherez Datskie Prolivy i Ego Vliyanie na Mnogoletnie Kolebaniya Solenosti Baltiiskago Morya) tr. by M. Slessers. 1961 [19]p. 5 refs. HO Trans-102, no. 3.
Order from OTS or SLA $1.60 61-27998

Trans. of Gosudarstvennyi Okeanograficheskii Institut. Trudy (USSR) 1959, v. 37[49] p. 34-41.

DESCRIPTORS: *Danish Straits, *Baltic Sea, *Salinity, Measurement.

The author has computed the yearly magnitudes of salt exchange through the Danish Straits for the period 1920 through 1939. The computation is based on earlier data concerning the water exchange through the straits, and on systematic observations of salinity at two floating lighthouses. These were located on the border between the straits and the southwestern part of the Baltic Sea: i.e. at Gedser-Rev (on the Darser Ridge) and at Drogden (on the Drogden Ridge). The analysis of annual movement of salt through the strait during the thirties shows a systematic decrease in the amount of exchanged salt with the dominant movement of salt being from the North Sea into the Baltic. This work points out that this movement combined with other causes, has had a substantial influence on the increase of salinity in the Baltic Sea starting in 1930. Furthermore, it is stated that the multiannual movement of water and salt exchanges is linked with the character of atmospheric circulation over Europe. (Author)

Volkov, P.
NEW EXPLORATIONS OF THE BOTTOM TOPOGRAPHY IN THE GREENLAND SEA. July 61 [8]p. 2 refs. DSIS T 356 R.
Order from NRCC NRCC C-3760

Trans. of Morskoi Flot (USSR) 1961 [v. 21] no. 3, p. 35-37.
Another trans. is available from OTS or SLA $1.60 as 61-27870, JPRS-9782, 8 Aug 61 [13]p.

DESCRIPTORS: *Ocean bottom, *Greenland Sea

The floor relief of the northern half of the Greenland Sea was found to be related to the vast deep-sea saddle located between Spitzbergen and Greenland. The central part of the saddle, approximately along the meridian 1^{o} East Longitude is cut by a trench with depths exceeding 3,000 m. It connects the deep-sea areas of the Central Polar Basin with the southern half of the Greenland Sea. An exchange of deep-sea water occurs along this trench between the Arctic Ocean and the Greenland Sea. The central part of the trench is the deepest with depths of 3,500 to 3,900 m. The northern part of the trench has depths of the order from 3,100 to 3,400 m. Nansen's Ridge, actually ends at 82^{o} North Latitude; in the direction of Greenland it does not stretch beyond the 0^{o} meridian.

Physics of the Atmosphere

Istomin, V. G.
MAGNESIUM AND CALCIUM IONS IN THE EARTH'S UPPER ATMOSPHERE (Iony Magniya i Kal'tsiya v Verkhnei Atmosfere Zemli) tr. by Andre L. Brichant. Sep 61, 9p. 11 refs. NASA Technical Trans. F-69; AD-263 090.
Order from OTS $0.50 61-31613

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 136, no. 5, p. 1066-1068.
Another trans. is available from OTS or SLA $1.10 as 61-27160, MCL-1071/1-2; AD-259 610, 26 May 61 [9]p.

DESCRIPTORS: *Magnesium, *Calcium, *Ions, Upper atmosphere, *Earth, Oxygen, *Lithium, *Night sky, Luminescence, Measurement, Recording devices, Spectrographic data, Sounding rocket, Alkaline earth metals, Alkaline earth compounds, Atoms, *Ionosphere

For abstract see Technical Translations 6: 503, 1961.

Kondrat'ev, K. Ya. and Yastrebova, T. K.
THE EFFECT OF STRATIFICATION ON ATMOSPHERIC HEAT RADIATION (K Voprosu o Vliyanii Stratifikatsii na Teplovoe Izluchenie Atmosfery) tr. by Burton J. Hobson. Jan 61 [6]p. 4 refs. AmMetSoc T-R-344+. AD-264 573
Order from OTS or SLA $1.10 61-28821

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1957, no. 6, p. 831-833.

DESCRIPTORS: *Atmosphere, *Thermal radiation, *Air mass analysis, Molecular spectroscopy, Humidity, Pressure, Geophysics, Temperature, *Stratification.

Computations are made to evaluate the role of such stratification factors as the relationship between temperature and pressure and the intensity and width of absorption lines, and the relationship between pressure and line width produced by the effect of intermolecular collisions.

ENGINEERING

Belikov, V. N. and Nikitin, A. N.
ASSEMBLY OF AIRCRAFT ENGINES. 4 Aug 61 [176]p. 18 refs. MCL-1016/1+2.
Order from OTS or SLA $12.50 61-28998

Unedited rough draft trans. of mono. Sborka Aviatsionnykh Dvigatelei, Moscow, 1959, 120p.

DESCRIPTORS: *Airplane engines, *Production,

The book contains basic data on the planning, organization of technological process and precision of assembling aircraft engines. Methods are described for carrying out the preparatory operations, data are given on the basic linkages and connections used during assembly. Examples are presented of the assembly of units and of the engines of various types. The book is a training text for students in advanced schools and technical schools in passing the course "Assembly of Aircraft Engines", and also may be of interest for engineer-technical workers of the corresponding branches of industry. (Soviet publisher's note)

Dolodonov, S.
RADIATION AND CHEMICAL RECONNAISSANCE (Radiatsionnaya i Khimicheskaya Razvedka). 7 Sep 61 [10]p. JPRS: 10059.
Order from OTS or SLA $1.10 61-28413

Trans. of Voennyi Vestnik (USSR) 1961 [v. 41] no. 5, p. 50-53.

DESCRIPTORS: *Radioactivity, *Chemical warfare agents, Contamination, Countermeasures, USSR.

To obtain timely data about the regions contaminated with radioactive and poisonous materials, it is necessary to organize a radiation and chemical reconnaissance of the routes for the movement of advancing subsections of a battalion. The task of the reconnaissance is to establish timely the start of the chemical attack of the enemy and the radioactive contamination of the region and to notify the sections; to mark the contaminated parts of the route in the movement toward an objective. In case of need, the reconnaissance has the duty to search roundabout ways or the most convenient directions for surmounting the contaminated zones. For the execution of these tasks it is expedient to include one or two chemists-scouts in the make-up of each individual scouting patrol of the battalion while advancing. (Extracted)

Mindeli, E. O.
CALCULATION OF A SPECIFIC EXPLOSIVE CHARGE (REQUIRED IN BLASTING) (Raschot Udol'nogo Zaryada VV) tr. by L. Moyor. Nov 60 [6]p. 1 ref. S.M.R.E. Trans. no. 4426; [DSIR LLU] M.3063.
Order from OTS or SLA $1.10 61-27594

Trans. of Shakhtn[oe] Stroitel'stvo (USSR) 1959, no. 11, p. 16-17.

DESCRIPTORS: *Explosives, *Shaped charges, *Mining engineering, Blast, Determination, Demolition.

Experimental investigations and data obtained from present-day practice established that the specific explosive charge depends on the cross-sectional area of the mine working, the depth of the shot-hole, the diameter of the explosive cartridges, the physical-mechanical properties of the intersected strata, the number of shotholes, the coefficient of the efficiency of the shothole, the density of the charge and the blasting power of the explosive. (Extracted)

Chemical Engineering

AZERBAIDZHAN OIL INDUSTRY, 1940, VOL. 20, NO. 12: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 7p. 19 refs.
Order from OTS or SLA $1.10 61-20391

Abstract trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1940, v. 20, no. 12, p. 41-46.

DESCRIPTORS: *Petroleum industry, USSR, *Oils, Processing, Periodicals, Refineries, Chlorine, Water vapor, Chemical reactions.

Contents:
Research on selective refining, by A. S. Eigenson
Effect of chlorine and water vapor on the fraction 35-40 of light pyrolyzed oil, by M. M. Movsumzade.

Duftschmidt, F. and Markert, F.
LARGE-SCALE SLAGGING PRODUCERS OF GAS FOR CHEMICAL SYNTHESES (Entwicklung von Grosstechnischen Abstichgeneratoren zue Synthesegas-Erzeugung). [1961] [16]p. 10 refs.
Order from SLA $1.60 61-18301

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1960, v. 32, no. 12, p. 806-811.

DESCRIPTORS: *Slags, *Coke, Processing, *Gases, Production, *Hydrocarbons, Synthesis

After 1945, the Badische Anilin & Soda Fabrik plant developed large slagging producers which under full load delivered 55,000 m^3 of gas for chemical synthesis per hour. To do this required 12,000 m^3 of pure oxygen and 24 tons of coke. When desired, the producers are also capable of converting liquid, distillable or gaseous hydrocarbons into such gas. The producers are designed for the maximum automation operation. By utilizing waste heat, the gasification media are preheated, liquid hydrocarbons vaporized, and the remainder of the heat employed to generate steam. The incidental coke dust is returned to and gasified in the producer. Questions of characteristics in slag-drawing and of the gasification processes beyond the (blast) forms in the splitting of hydrocarbons are discussed as well as the viewpoints which determined the planning of the installation and the design of the components. (Author)

Evstaf'ev, V.
PROJECTED PROCESSING OF SULFUROUS OIL AT THE SYZRAN REFINERY. [1961] 3p.
Order from OTS or SLA $1.10 61-20364

Condensed trans. of Novosti Tekhniki (USSR) 1940, v. 9, no. 13/14, p. 38-40.

DESCRIPTORS: *Petroleum, Sulfur, *Oils, Processing, USSR.

Faron, M. J., Bottazzi, H. J., and Teichner, S. J.
A NEW DEVICE FOR PRODUCING ULTRA-HIGH VACUA, tr. by R. Tangen. [1961] 16p. 6 refs.
Order from SLA $1.60 61-20004

Trans. of Journal de Chimie Physique (France) 1960, v. 57, no. 7/8, p. 600-605.

DESCRIPTORS: *Vacuum apparatus, *Vacuum operated valves, Design, Operation, Pressure.

A metal valve of a novel type is described which incorporates no brazed part and can be taken apart completely. It is remarkably tight as it has a leakage conductance of approximately 10^{-18} l/sec. Pressures of approximately 10^{-10} mm Hg can be obtained with this device after outgassing of the valve and the ultra-high vacuum at 200°C in only 3 hours. These outgassing standards are entirely new for equipment of this type.

Gerasimov, V. V., Gromova, A. I., and Sabinin, A. A.
AN AUTOCLAVE FOR CARRYING OUT ELECTROCHEMICAL INVESTIGATIONS AT HIGH TEMPERATURES AND PRESSURES. [1961] [4]p. 3 refs.
C. E. Trans. 1834; [DSIR LLU] M. 3176.
Order from OTS or SLA $1.10 61-27495

Trans. of #Zavod[skaya] Lab[oratoriya] (USSR) 1958, v. 24, no. 11, p. 1420-1421.

DESCRIPTORS: Electrochemistry, *Sterilizers, Design, High temperature research, High pressure research.

Kamyshev, S. F., Galikhin, V. D. and others.
THE GROZNYI PETROLEUM INDUSTRY. [1961] 52p. (3 figs. omitted). H-8640.
Order from OTS $1.50 61-31672

Trans. of mono. (brochure) Groznenskaya Neftyanaya Promyshlennost', Moscow, 1957, 58p.

DESCRIPTORS: *Petroleum industry, *USSR, Geophysical prospecting, Industry.

Koyemann, Hans Eduard.
INSTALLATION FOR THE PRODUCTION OF CHLORDIOXYD DILUTIONS. [17 Oct 60] 2p. 1 ref.
Order from OTS or SLA $1.10 61-20280

Trans. of German patent 1 076 636 (addition to patent 1 069 122, originated 30 Aug 58) date of notification 10 Sep 58, pub. of notification and issue of summary 3 Mar 60, pub. 25 Aug 60.

DESCRIPTORS: *Chlorine compounds, *Dioxides, Production, *Laboratory equipment, Reagents, Oxides.

The invention is concerned with further development of the apparatus for the production of chlordioxyd dilutions. The essential part consists in directly joining the reagent vessel to a water pipe with the aid of injection pipes reaching into the treated main water flow for varying distances; at the same time a flow control is installed in the water pipe such as to shut off the drive of the metering pump for the reactants in case no water should be flowing in the main line. (Extract)

Lebedev, V. V.
CONTINUOUS METAL STEAM METHOD OF HYDROGEN PRODUCTION. 1 Sep 61 [23]p. 8 refs.
MCL-1164/1+ 2. AD-264 513
Order from OTS or SLA $2.60 61-28491

Unedited rough draft trans. of A[kademiya] N[auk] SSSR. Institut Goryuchikh Iskopaemykh. Trudy, 1959, v. 11, p. 215-225.

DESCRIPTORS: *Hydrogen, Production, Economics, Metal, Steam, Decomposition.

A continuous metal-steam process of hydrogen production was studied in an enlarged laboratory installation. It was shown that such a process can be set

up on an industrial scale. Gases rich in carbon monoxide and containing a large amount of inert constituents were used as reducing agents. The continuous metal-steam method offers compactness of the installation, high output, efficient material utilization and low reaction temperatures (450-480°). (Author)

Musatov, K. A.
COMBINED REFINING OF PYROLYZED OIL DISTILLATES (WITH ZINC CHLORIDE AND SULFURIC ACID). [1961] 10p. 3 refs.
Order from OTS or SLA $1.10 61-18018

Trans. of Neftyanoe Khozyaistvo (USSR) 1940, v. 21, no. 1, p. 25-29.

DESCRIPTORS: *Oils, Fractionation, *Sulfuric acid, Acids, *Zinc compounds, *Chlorides, Chemical reactions

Combined refining using zinc chloride repeats all the operations of sulfuric acid treating and differs from the latter by passing the distillate vapors through a contact column with zinc chloride before the rectifying column. Under optimal conditions (225-350°, 2-10% zinc chloride supported on hydroxides or light clays) the period of work of the catalyst under full load amounts at the average to 7-10 days. The consumption of the carrier in the case of clay does not exceed 2% on the refined distillate; the consumption of zinc chloride is within 0.05 and 0.1%. Under the above-mentioned conditions, the combined refining results in a saving of sulfuric acid reaching 75%, and increases the yield of the finished product by from 4 to 6%. (Author)

Musatov, K. A. and Nifontova, S. S.
VAPOR PHASE DESULFURIZATION WITH SULFURIC ACID [1961] 8p. 11 refs.
Order from OTS or SLA $1.10 61-16869

Trans. of Neftyanoe Khozyaistvo (USSR) 1940, v. 21, no. 3, p. 28-32.

DESCRIPTORS: *Oils, Desulfurization, Oxidation, *Sulfuric acid, Acids, Chemical reactions

Concentrated sulfuric acid oxidizes in the vapor phase at 200° and higher all classes of sulfur compounds found in ligroin-kerosene fractions of oils of the type of Ishimbai oil [highly sulfurous]. The oxidation method of vapor phase desulfurization is well applicable for removal of the so-called "residual sulfur , in which case most other methods are not much effective. The loss of distillate in vapor phase desulfurization amounts to 0.3% per each percent of acid spent. These losses include sulfur compounds and aromatics, but the loss of the latter is 9-10 times lower than that of sulfur compounds. (Author)

Stetyukha, E. I.
THE GROZNYI PETROLEUM INSTITUTE. 21 Sep 61 [5]p. JPRS: 4989.
Order from OTS or SLA $1.10 61-28388

Trans. of Neftyanik (USSR) 1961 [v. 6] no. 4, p. 21-22.

DESCRIPTORS: *Petroleum industry, Industry

Timofeev, N. S.
SCIENTIFIC-RESEARCH AND EXPERIMENTAL-DESIGN WORK IN DRILLING. 14 Sep 61 [19]p. JPRS: 8870.
Order from OTS or SLA $1.60 61-28785

Trans. of Neftyanoe Khozyaistvo (USSR) 1961 [v. 39] no. 5, p. 7-12.

Portions of this report will not reproduce well.

DESCRIPTORS: *Well drilling, Petroleum, Scientific research, *Drilling machines, *Drills, Design, USSR.

Civil Engineering

INSTRUCTIONS FOR THE DESIGN OF STATICALLY INDETERMINATE REINFORCED CONCRETE STRUCTURES WITH CONSIDERATION OF STRESS REDISTRIBUTION. [1961] [102]p.
Order from OTS or SLA $9.10 61-18758

Trans. of mono. [Instruktsiya po Raschetu Staticheski Neopredelimykh Zelezobetonnykh Konstruktsii s Uchetom Pereraspredeleniya Usilii, Moscow, 1960 [109p.].

DESCRIPTORS: Design, *Reinforced concrete, Stresses, Load distribution, Deformation, Roofs, Construction, Foundations (Structures), Concrete, *Structures.

The instructions contain the fundamental principles of and instructions for the design of statically indeterminate reinforced concrete structures with consideration of stress redistribution caused by prestress, inelastic deformation of materials and formation of cracks. The instructions apply to precast, precast and monolithic, and monolithic conventional and prestressed concrete structures: industrial and public buildings. The instructions also deal with problems of roof and plane structures, plane frames and certain types of foundations. (Extracted)

Brice, L. P. and Chefdeville, J.
FIRE RESISTANCE OF A REINFORCED CONCRETE BUILDING: OBSERVATIONS RECORDED AFTER THE FIRE AND REPAIR OF DAMAGE. [1961] [21]p. (12 figs. omitted).
Order from SLA $2.60 61-20561

Trans. from Institut Technique du Bâtiment et des Travaux Publics. Paris. Annales (France) 1959 [no. 144].

DESCRIPTORS: *Reinforced concrete, *Buildings, Construction, France, Structures, Refractory materials, *Fires, Countermeasures, Resistance, Sand, Glass, Concrete, Beams.

Bührer, R.
TESTS ON PRESTRESSED CONCRETE POLES. [1961] 12p.
Order from SLA $1.60 61-20027

Condensed trans. from Eisenbahntechnische Rundschau (West Germany) 1958, May.

DESCRIPTORS: Concrete, *Reinforced concrete, *Load distribution, Steel, Tensile properties, Stresses, *Telephone poles, Electric wire.

Bending tests and torsion tests show "partial" prestressing to be suitable for achieving economical utilization of prestressed concrete in the design of poles. (Author)

Dutron, P. and Huberty, J.
RESURFACING AND WIDENING OLD CONCRETE CARRIAGEWAYS WITH CONCRETE. [1961] 11p. 11 refs.
Order from SLA $1.60 61-20028

Trans. from National Belgian Roads Conference (no. 9) 1959. [Proceedings].

DESCRIPTORS: *Concrete, Belgium, *Roads, Traffic, *Cements, *Surfaces, Deterioration, Construction, Bituminous surfacing, Pavements, Materials, Stress analysis, Mortar, Load distribution.

Klyueva, K. A.
ON THE EFFECT OF MARSH DRAINAGE ON RIVER DISCHARGE (K Voprosu o Vliyanii Osusheniya Bolot na Rechnoi Stok). [Nov 61] 5p. PL-480 Agr.
Order from OTS $0.50 60-21891

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 6, p. 17-20.

DESCRIPTORS: *Drainage, Water, *Evaporization, *Soils, *Swamps, Estuaries, Precipitation, Snow

From an analysis of the discharge data of the Oressa River at the Andreevka Gauging Station, the general conclusion is drawn that the drainage of marshes has a beneficial effect on river feeding. Redistribution of the discharge within the year in the direction of its leveling off takes place in the drained catchment areas. During the process of drainage, independently of the purpose for which it is carried out, channels for draining off excess moisture are created and the ground-water level is thereby lowered. As a result, an additional accumulating surface layer of peat is formed on the marsh or on the bogged-up area, which retains and then slowly releases the entering snow and rain waters. Spring-flood runoff, which formerly ran to waste into river streams drops appreciably and summer and winter discharge increases. In addition, lowering of ground water on the marsh decreases evaporation, and more precipitation runs off the marsh than before draining, thereby increasing the summer discharge.

Stout, Gerhard.
MACHINES AND EQUIPMENT FOR CONCRETE ROAD CONSTRUCTION. [1961] [31]p. 12 refs.
Order from SLA $3.60 61-20223

Trans. from Bau-Maschine und Bau-Technik (West Germany) 1956, v. 3, no. 3.

DESCRIPTORS: *Road building equipment, Roads, *Concrete, Construction.

Titkov, N. I., Korzhuev, A. S. and others.
USE OF ELECTRIC CURRENT FOR STRENGTHENING FORMATIONS ON THE WALLS OF WELLS. [1961] 27p.
Order from ATS $42.85 ATS-52N54R

Trans. of [Akademiya Nauk SSSR]. Inst[itut] Nefti. Trudy, 1958, v. 11, p. 85-110.

DESCRIPTORS: *Electric currents, *Walls.

Electrical and Electronic Engineering

Bichara, Robert.
TRANSIENT EFFECTS IN RECTIFIER INSTALLATIONS AND THEIR DAMPING. [1961] 21p.
Order from STT $15.00 STT-154-161

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (West Germany) 1960, v. 81, no. 26, p. 937-944.

DESCRIPTORS: Electrical equipment, *Rectifiers, *Transients.

Bogdanov, D. I.
SYNCHRONOUS THYRATRON TIMER. [1961] 6p.
Order from ATS $9.50 ATS-61N54R

Trans. of Vestnik Elektroprom[yshlennosti] (USSR) 1960, v. 31, no. 8, p. 41-44.

DESCRIPTORS: Synchros, Thyratrons, *Chronograph.

Burdun, Grigoriya Dmitrievich, Valitov, Rafkat Amirkhanovich and others.
RADIO MEASUREMENTS ON MILLIMETER WAVES. [1961] [217]p. 56 refs. USASIA Trans. log no. 1075.
Order from OTS or SLA $14.50 61-28455

Trans. of mono. [Radiozmereniya na Millimetrovykh Volnakh] Kharkov, 1958.
Partial trans. (chap. 3 and 5, in part) is available from OTS or SLA $5.60 as 61-19431, MCL-646/III, AD-255 408, Dec 60 [55]p.

DESCRIPTORS: *Microwave equipment, Measurement, Electronic equipment, Attenuation, *Radiofrequency power, Wavemeters, Wattmeters, Impedance, Standing-wave indicators, Magnetic properties, Dielectric properties, Materials, Electromagnetic waves, Power meters

The book discusses the methods and instruments employed in the measurement of wavelength, frequency, power, attenuation, impedances, voltage standing-wave ratios, the dielectric and magnetic properties of materials. (Author)

Chernysh, V. I.
PHOTOELECTRONIC METHOD OF SELECTING WEAK PULSE SIGNALS. 9 Aug 61, 5p. 1 ref. AID rept. 61-118; AD-263 463.
Order from OTS or SLA $1.10 61-28473

Abstract trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1961, no. 2, p. 97-101.

DESCRIPTORS: Radar, Sensitivity, *Aerial targets, Detection, *Radar equipment, Photomultipliers, Triggered gates, Radar scanning, Oscillators, Circuits, Design.

A storage device for increasing the sensitivity of aerological radar is described that uses a photomultiplier as the selecting element.

Flerov, V. N.
NICKEL-ZINC BATTERIES. Feb 60 [7]p. (4 figs. omitted) [DSIR LLU] M 3159.
Order from OTS or SLA $1.10 61-27509

Trans. of Nauch[nye] Dokl[ady] Vysshei Shkoly. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1959, no. 2, p. 402-405.

Portions of this report will not reproduce well.

DESCRIPTORS: *Alkaline cells, Nickel, Zinc, Storage batteries, *Zinc electrodes, *Nickel compounds, *Oxides, *Electrodes.

Nickel-zinc batteries based on sintered nickel-oxide and powder zinc electrodes were prepared and studied. Operating characteristics of NZ batteries substantially exceed those of non-lamellar CN batteries and approach those of SZ batteries.

Foellinger, O.
ON THE DETERMINATION OF THE ROOT LOCUS CURVE (Uber die Bestimmung der Wurzelortskurve). 11 Mar 59, 18p. 4 refs.
Order from SLA $1.60 61-20696

Trans. of Regelungstechnik (West Germany) 1958, v. 6, no. 12, p. 442-446.

DESCRIPTORS: *Control systems, Tests, Frequency, Numerical analysis, *Curve fitting.

Fritzsche, W.
ACCURATE AND RAPID SPEED REGULATION (OF ELECTRIC MOTOR DRIVES) BY DIGITAL METHODS. Nov 61.
Order from BISI £5 5s BISI-2442

Trans. of AEG Mitt[eilungen] (Germany) 1960, v. 50, Aug/Sep, p. 419-426.

DESCRIPTORS: *Speed regulators, Electric machinery, *Electric motors, *Current regulators, *Digital systems.

Gurevich, A. G.
FERRITES AT MICROWAVE FREQUENCIES. [1961] approx. 270p.
Order from CB $17.50

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Microwave frequency, *Ferrites, Magnetic properties, Electromagnetic waves, Oscillations, Propagation, Waveguides, Oscillators, Amplifiers, Cavity resonators, Design, Magnetic susceptibility, Ferromagnetism, Resonance, *Ultra high frequency, Frequency.

Haamann, K. P.
EXCITATION AND CONTROL OF LARGE SYNCHRONOUS MACHINES WITH CURRENT RECTIFIERS. Sep 61.
Order from BISI £4 15s BISI-2403

Trans. of [ETZ] Elektrotechnische Zeitschrift. Ausgabe A. [Zentralblatt fur Elektrotechnik] (West Germany) 1960 [v. 81] 25 Apr, p. 317-323.

DESCRIPTORS: *Machines, *Synchros, Control systems, *Electric currents, *Rectifiers.

Heynisch, Hinrich.
THE RESONANT BACKWARD-WAVE OSCILLATOR, A GENERATOR OF MICROWAVES. [1961] 13p. 9 refs.
Order from SLA $1.60 61-20525

Trans. of Arch[iv der] Elek[trischen] Ubertragung (West Germany) 1960, v. 14, no. 12, p. 531-538. Another trans. is available from ATS $16.65 as ATS-21N53G [1961] 13p.

DESCRIPTORS: *Backward-wave oscillators, Resonance, Operation, Electrical properties, *Microwaves, Generators, Oscillators.

Kessler, Claus.
A CONTRIBUTION TO THE THEORY OF ON-OFF CONTROLLERS (Ein Beitrag zur Theorie des Zweipunktreglers). [1961] [11]p.
Order from SLA $1.60 61-20725

Trans. of Regelungstechnik (West Germany) 1957, v. 5, no. 10, p. 339-342.

DESCRIPTORS: Control, Amplifiers, Feedback, *Feedback amplifiers, Theory.

Krasovskii, N. N.
ON A METHOD OF CONSTRUCTING OPTIMAL TRAJECTORIES. 6 Sep 61 [19]p. 14 refs. JPRS: 4939.
Order from OTS or SLA $1.60 61-28305

Trans. of Matematicheskii Sbornik (USSR) 1961, , v. 53(95) no. 2, p. 195-206.

DESCRIPTORS: *Control systems, Linear systems, Numerical methods and procedures, Differential equations.

A method is described for determining optimal trajectories (with respect to the duration of the transient process) for linear nonstationary systems in the case of limited control function moduli.

Matsumoto, G., Nohara, S., and Mano, K.
INVESTIGATION OF THE CONTACT AND DURATION MEASUREMENT APPARATUS AND THE ARC DURATION OF SILVER CONTACTS. [1961] 3p.
Order from ATS $5.00 ATS-63N50J

Trans. of mono. Denki Kankei Gakkai Tohoku Shibu Rendai (Trans[actions of the] Joint Meeting of the Tohoku Branches of the Electrical Engineering Societies) Oct 58.

DESCRIPTORS: *Silver, Sliding contacts, Life expectancy, *Electric switches, Switches, *Electric arcs, Measurement, Instrumentation.

Petrov, B. N. and Starikova, M. V.
HUNTING IN AUTOMATIC CONTROL SYSTEMS CONTAINING LOGIC DEVICES (Issledovanie Avtokolebanii v Sistemakh Avtomaticheskikh Regulirovaniya s Logicheskimi Ustroistvami). 2 Oct 61 [16]p. 7 refs.
JPRS: 10281.
Order from OTS or SLA $1.60 61-28869

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 3, p. 3-13.

DESCRIPTORS: Automatic, *Control systems, Tests, Numerical analysis.

An approximate method based on harmonic linearization is presented for use in analyzing hunting in complex nonlinear automatic-control systems; the method is illustrated by reference to a high-order system containing a logic unit that has two inputs and one output, the inputs having three discrete values each. The method enables one to evaluate the effects of system parameters on the amplitude and frequency of the hunting in a certain class of such systems, and it also enables one to determine the conditions that guarantee the absence of hunting or the presence only of hunting having a specified frequency and an acceptable amplitude. (Author)

Pfaffenberger, Joachim and Zenneck, Hans.
THE TECHNOLOGY OF THE SILICON RECTIFIER. [1961] [29]p.
Order from SLA $2.60 61-20609

Trans. of mono. Silicon Rectifiers [Berlin] n.d. p. 10-22.

DESCRIPTORS: *Rectifiers, Semiconductors, Materials, *Silicon, Electrical equipment.

Pugachev, V. S.
APPLICATION OF THE THEORY OF MARKOFF PROCESSES TO THE ANALYSIS OF THE ACCURACY OF AUTOMATIC SYSTEMS (Primenenie Teorii Markovshikh Protsessov k Analizu Tochnosti Avtomaticheskikh Sistem). 2 Oct 61 [17]p. 9 refs. JPRS: 10282.
Order from OTS or SLA $1.60 61-28744

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1961, no. 3, p. 46-57.

Portions of this report will not reproduce well.

DESCRIPTORS: Automatic, *Control systems, Tests, Analysis, Statistical processes, Probability, Differential equations, Integral equations.

A general outline is given of the integrodifferential equations that define the one-dimensional distribution law for a random process; those equations describe Markoff processes that are defined by systems of ordinary differential equations having additive white-noise spectra on the right. The equations given here differ from the classical one (Fokker-Planck-Kolmogorov) in that the right halves can be discontinuous and can have discontinuous derivatives. For this reason the equations are particularly suitable for computing the probability parameters of the output variables of a nonlinear system, which in nearly all cases will contain units with response curves that are discontinuous or that have discontinuous derivatives (relays, units showing saturation, etc). The accuracy demanded of the nonlinear computation system is such that only digital computers can satisfy the requirement. The theory is applicable in practice only to systems containing high-speed digital computers. (Author)

Pugachev, V. S.
THEORY OF RANDOM FUNCTIONS AND ITS APPLICATION TO PROBLEMS OF AUTOMATIC CONTROL, CHAPS. 16-18. 3 Aug 61 [303]p.
MCL-900/1 + 2.
Order from OTS or SLA $19.75 61-28532

Unedited rough draft trans. of mono. Teoriya Sluchainykh Funktsii i Ee Primenenie k Zadacham Avtomaticheskogo Upravleniya [2d. ed.] Moscow, 1960, p. 593-825.

DESCRIPTORS: Automatic, *Control systems, Theory, Linear systems, *Statistical functions, Numerical analysis.

Contents:
Problems of the theory of optimum systems
Methods of determining optimal linear systems
Methods of determining optimal nonlinear systems.

Raymund, Hellmuth.
TURBOGENERATORS WITH DIRECT CONDUCTOR COOLING. [1961] 14p.
Order from STT $10.00 STT-171-03

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (West Germany) 1960, v. 81, no. 20/21, p. 735-740.

DESCRIPTORS: *Turbines, *Generators, Conductors, Cooling.

Shuvalov, N. K.
PROGRAM CONTROL SYSTEMS FUNCTIONING ON THE COMBINATION PRINCIPLE. 5 Oct 61 [97]p. 24 refs. JPRS: 10318.
Order from OTS or SLA $8.60 61-28629

Trans. of mono. [Sistemy Programmnogo Regulirovaniya, Rabotayushchie na Kombinirovannom Printsipe] Leningrad, 1960, 72p.

DESCRIPTORS: Automatic, *Control systems, Design, Operation, Servomechanisms.

This book considers the main features of the combined principle of control, as applied to program systems. The great potentialities of this control principle in the design of systems of increased accuracy is pointed out, and a procedure is developed for the design of correcting devices responding to arbitrary control signals. Calculation examples are given, and relative data are briefly considered for systems operating on the error-proportional principle and on the combined principle. The present book is designed for engineers working in design organizations, and can be useful to advanced students of power institutes. (Soviet publisher's note)

Sorkin, Yu. I.
ALGORITHMIC SOLVABILITY OF THE PROBLEM OF ISOMORPHISM FOR AUTOMATA. 15 Sep 61 [10]p. 6 refs. JPRS: 8883.
Order from OTS or SLA $1.10 61-28752

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 137 [no. 4] p. 804-806.

DESCRIPTORS: *Cybernetics, Control, *Control systems, Theory, Automation, Numerical methods and procedures, Algebra.

Automata and partial automata are a partial case of general algebraic systems and of correspondingly partial algebraic systems. Therefore, such concepts of the general theories of algebraic systems have the sense in full as: isomorphism, homomorphism, automorphism, sub-automata, a system of generators, a free automata, and so forth. In particular, through a natural method a problem theory is constructed for automata by their conditional correlations. (Extracted)

Mechanical Engineering

Datskovskii, V. M.
RATIONAL PARAMETERS FOR STEAM POWER PLANT INSTALLATIONS WITH WASTE HEAT BOILERS. [1961]
Order from FT $11.75 FT-603

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 5, p. 76-78.

DESCRIPTORS: *Steam power plants, Boilers, Heat.

Markovich, L. M., Taft, V. A. and others.
PRESENT STATE OF APPLICATION OF COMPUTER TECHNIQUE TO OPERATING AND PLANNING POWER SYSTEMS. [1961] 10p. 35 refs. [DSIR LLU] M. 4026.
Order from OTS or SLA $1.10 61-28197

Trans. of #Elektrichestvo (USSR) 1960, no. 11, p. 1-7.

DESCRIPTORS: *Computers, *Power plants, Operation.

Przhiyalkovskii, M. M. and Petrova, L. N.
HYDRAULIC RESISTANCES OF TUBES IN THE CASE OF RISING FLOW OF A STEAM-WATER MIXTURE AT HIGH VELOCITIES AND HIGH AND ULTRA-HIGH PRESSURES. [1961] 7p.
Order from ATS $10.00 ATS-09N54R

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 6, p. 25-28.

DESCRIPTORS: *Boiler tubes, Mechanical properties, *Feed water, Motion, Velocity, Pressure.

Studer, Jean.
HEATING INSTALLATION USING LIQUID FUEL, tr. by G. E. 18 Sep 61, 10p. (1 fig. omitted).
Order from OTS or SLA $1.10 61-28542

Trans. of Swiss patent 306,584, cl. 7b, appl. 31 Dec 52, registered 30 Apr 55, pub. 1 July 55.

DESCRIPTORS: *Heating plants, Heat exchangers, *Fuel oil, Fuels.

The installation is comprised of at least one heat exchanger to reheat the liquid fuel, with the aid of a portion of the thermal units released by the furnace, and at least one electric heating element permitting the heating of a given quantity of liquid fuel contained in a reserve tank, for the purpose of facilitating the igniting and improving the combustion. It is characterized in that the heat exchanger is inserted in the circuit for return to the common tank of the excess fuel of the burner. A second heat exchanger is in contact with the fuel contained in the reserve tank to reheat the latter. The second heat exchanger is supplied with thermal units through the excess fuel heated in the first exchanger and returning to the common tank to reheat gradually the fuel contained in the latter.

Ordnance, Missiles, and Satellite Vehicles

AN ANNOUNCEMENT ON THE FLIGHT OF YURI GAGARIN. 8 Aug 61 [5]p. MCL-1147/1; AD-262 618.
Order from OTS or SLA $1.10 61-28239

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1961, no. 88(11018) p. 1.
Another trans. is available from OTS or SLA $1.10, in 61-28269, JPRS-8846, 8p.

DESCRIPTORS: *Space flight, Satellite vehicles

This is the official announcement of the Central Committee of the Communist Party of the Soviet Union, the Presidium of the Supreme Soviet of the USSR and the Government of the Soviet Union. It is an encomium on Soviet accomplishments.

COMPREHENSIVE ANALYSIS OF SOVIET SPACE PROGRAM, 1958-61. 22 May 61 [187]p. 216 refs. AID rept. 61-72; AD-260 501.
Order from OTS $3.00 61-31679

DESCRIPTORS: *Literature, USSR, *Space flight, Aerodynamics, *Recovery, *Spaceships, Theory, *Satellites, Man, *Experimental data, *Manned, Launching, Laboratory animals, Space medicine, Communication systems, Acceleration, *Rockets, *Bibliography, *Satellite vehicles, Re-entry aerodynamics.

Contents:
Introduction
Soviet capability of developing a multipurpose carrier-rocket
1. Aerodynamics and space flight
2. Recovery problems
3. Possible design types of the Soviet multipurpose carrier-rocket
4. Possible structure of the Soviet multipurpose carrier-rocket
The spaceship-satellites and the Soviet space program
1. First Soviet spaceship-satellite
2. Man in space
3. Second Soviet spaceship-satellite (Sputnik V)
4. Other satellites
5. The Soviet space program
References
Appendix 1: New indications in Soviet space technology
Appendix 2. Possible Soviet launching system for present-day satellites
Appendix 3: Deceleration of space vehicles
Appendix 4: Testing of engines for future space vehicles.

ON SOVIET MAN IN THE COSMOS. 11 Sep 61 [8]p. JPRS: 8846.
Order from OTS or SLA $1.10 61-28269

Trans. of Priroda (USSR) 1961 [v. 50] no. 4, p. 1-4.

DESCRIPTORS: *Space flight, Manned, *Spaceships, USSR.

Contents:
Manned flight into space for the first time in the world
To the communist party and the people of the Soviet Union; to the peoples and to the governments of all countries; to all progressive humanity
To the Soviet cosmonaut who made a space flight for the first time in the world, Major Yurii Alekseevich Gagarin, by N. Krushchev
To all the scientists, engineers, technicians, workers, and to all the collectives and organizations which took part in the successful accomplishment of the flight of man into space.

SOVIET AVIATION, 1960, NOS. 218 AND 221: SELECTED ARTICLES. 21 Dec 61 [23]p. MCL-405/1+2; AD-258 497.
Order from OTS or SLA $2.60 61-23690

Unedited rough draft trans. from Sovetskaya Aviatsiya (USSR) 1959, no. 218, p. 2 and 4; no. 221, p. 3.
#Another trans. is available from LC or SLA mi$2.40, ph$3.30 in 60-13857, RAE LPT-2, Sep 59 [13]p.

DESCRIPTORS: USSR, Technological intelligence, *Space probes, Spaceships, Optical tracking, *Lunar probes, Gravity, Upper atmosphere, Manned, *Re-entry vehicles, *Rockets, *Air transportation, *Space flight.

Contents:
Optical orientation device on the voyage to the Cosmos, by V. Arsent'yev
How the speed of the rocket was changed, by B. Maksimachev
Cosmic rocket planes of the future, by S. S. Ustinov
Problems of science and technology transport rockets, by G. Petrovskii

Kurnosova, L. V., ed.
ARTIFICIAL EARTH SATELLITES, VOLS. 3-5. 1961. DSIR LLU E. 20583.
Order from PP $15.00

Trans. of mono. [Isskusstvennye Sputniki Zemli] n. p., n. d., v. 3-5.

DESCRIPTORS: *Satellite vehicles, Satellite vehicle research.

Nikiforov, N.
ARTILLERY: YESTERDAY AND TODAY (Artilleriya Vchera i Segodnya). 24 Feb 60 [6]p. AF 1419486.
Order from OTS or SLA $1.10 61-28334

Trans. of Voennye Znaniya (USSR) 1959 [v. 35, no. 11] p. 14-15.

DESCRIPTORS: *Artillery, USSR.

Petrovich, G. V.
SOVIET COSMONAUTS IN NEAR-SPACE. 19 Sep 61 [14]p. 1 ref. JPRS: 8897.
Order from OTS or SLA $1.60 61-28552

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 5, p. 13-22.

DESCRIPTORS: *Space flight, Manned, Spaceships, USSR.

Information is presented on the space ship Vostok of Yu. A. Gagarin.

Varvarov, N.
OUR NEAREST COSMIC NEIGHBOR. 17 Aug 61 [7]p. MCL-1270/1+2.
Order from OTS or SLA $1.10 61-28693

Unedited rough draft trans. from Ekonomicheskaya Gazeta (USSR) 1961, no. 116(969) p. 4.

DESCRIPTORS: *Satellite vehicles, *Moon, *Lunar probes.

The possibility is considered of creating artificial satellites of the moon.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

Steenholdt, K.
BRUSH DEVICE FOR CLEANING THE DIE AND PUNCH OF CERAMIC PRESSES. [1961] 4p.
Order from ATS $5.75 ATS-46N55G

Trans. of German printed [patent] application 1,025,772, filed 21 July 56, pub. 6 Mar 58.

DESCRIPTORS: *Brushes, Machines, Cleaning, Ceramic materials.

Engines and Propulsion Systems

Bublikov, E. I. and Kapinos, V. M.
INVESTIGATING THE TEMPERATURE FIELD OF A COOLED STEAM TURBINE ROTOR (Issledovanie Temperaturnogo Polya Okhladaemogo Rotora Parovoi Turbiny). 8 Mar 61 [17]p. 6 refs. MCL-835/1+2.
Order from OTS or SLA $1.60 61-27177

Rough draft trans. of Energomashinostroenie (USSR) 1960 [v. 6] no. 4, p. 8-12.

DESCRIPTORS: *Steam turbine rotors, Cooling, Temperature, Tests.

Results are discussed that were obtained during an investigation by the method of electrothermal analogy of modeling in electrolytic baths and temperature fields of one of the variants of a cooled turbine rotor type SKR-100 constructed by the S. M. Kirov Khar'kov Turbogenerator Plant. (Author)

Dubenetz, S. A.
PROBLEM OF THE STRENGTH OF ZhRD (LIQUID-FUEL ROCKET ENGINE) BURNER WITH CONNECTED ENVELOPES. 28 Aug 61 [20]p. 3 refs. MCL-1176/1+2. AD-264 516
Order from OTS or SLA $1.60 61-28500

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1958, no. 1, p. 133-142.

DESCRIPTORS: *Rocket motors, *Combustion chambers, Design, Mechanical properties, Liquid rocket propellants.

An expression is derived for the flexure of a cylindrical burner envelope with linear connectors, and an analysis is made of the reaction forces in the connectors of a burner with point contact connectors.

Gordeev, G.
PERFORMANCE OF AUTOMOBILE ENGINES ON AMERICAN AND SOVIET-MADE GASOLINE AND OIL. [1961] 4p.
Order from OTS or SLA $1.10 61-20415

Condensed trans. of [Avtomobil'nyi Transport] (USSR) 1946 [v. 24] no. 1, p. 4-7.

DESCRIPTORS: Passenger vehicles, *Gasoline, *Fuel oil, *Internal combustion engines, Oils, Vehicles.

Voronkov, B. S.
NUCLEAR REACTOR AS THE OBJECT OF CONTROL. 23 Mar 61 [56]p. 6 refs. MCL-842/1+2; AD-259 589.
Order from OTS or SLA $5.60 61-27260

Unedited rough draft trans. of Avtomaticheskoe Regulirovanie Aviadvigatelei: Sbornik Statei (USSR) 1960, v. 2, p. 66-106.

DESCRIPTORS: Nuclear propulsion, *Aircraft nuclear propulsion, Technological intelligence, USSR, *Control systems, Differential equations, Fission neutrons Heat transfer, *Thermodynamics, Thermal neutrons, Transport properties, Mathematical analysis.

The nuclear reactor on neutron power is described by a nonlinear differential equation of the seventh order. For examining the thermal state of the reactor and the effect of the temperature coefficient of the reactivity, it is necessary to take into consideration also the reactor equation for temperature. When there are little deviations from the position of equilibrium it is permissible to linearize the nonlinear differential equation of the reactor. With relation to perturbations by an excess coefficient of reactivity the reactor which does not have a temperature coefficient of reactivity is astatic. With the presence in the reactor of a negative temperature coefficient of reactivity, its properties are substantially changed. The reactor takes on the property of temperature autoregulation. The regulating organ with the aid of which the action on the mode of operation of the reactor is accomplished (absorbing rods), possesses a nonlinear characteristic: the absorbing capacity of the rod depends nonlinearly on the depth of its insertion in the active zone or the reflector. (ASTIA abstract)

Machine Parts and Mechanisms

Fröhling, J.
SIMPLE DESIGNS OF ROLL NECK BEARING FOR PURE HYDRODYNAMIC LUBRICATION. [Pt.] C of Plain Metal Bearings for Roll Necks, with Pure Hydrodynamic Lubrication. [1961] [6]p.
Order from SLA $1.10 61-20589

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 26, p. 1865-1867.

DESCRIPTORS: *Bearings, Design, *Lubrication, Hydrodynamics.

This paper reports on a design of roll neck bearing, consisting simply of roll neck (running surface), bearing body (running surface), external sealing rings and a vent. The lateral spaces between the end of the bearing and the seal are oil filled, to prevent any suction of air into the lubrication gap. By these measures penetration of foreign matter into the bearing is largely avoided. The oil circulating rig itself is simple and small. (Author)

Janda, Z.
TESTING STAND (INSTALLATION) FOR ROLLER BEARINGS. [1961] 8p.
Order from STT $6.00 STT-189-73

Trans. of Strojirenstvi (Czechoslovakia) 1960, v. 10, no. 11, p. 870-873.

DESCRIPTORS: *Roller bearings, Test equipment, Bearings.

Lipka, I.
THE GEOMETRY OF CONVEX (CURVED) RACEWAYS AT ROLLER BEARING RINGS. [1961] 41p.
Order from STT $35.00 STT-181-468

Trans. of Acta Technica (Hungary) 1960, v. 31, no. 3/4. p. 359-389.

DESCRIPTORS: *Roller bearings, Rings, Design.

Müllenbach, W.
ROLLNECK BEARINGS WITH RUNNING SURFACES ON THE NECKS FOR LARGE OIL THROUGHPUT; WITH DISCUSSION BY W. WEIDEMANN. [Pt.] B of Plain Metal Bearings for Roll Necks, with Pure Hydrodynamic Lubrication. [1961] [12]p. 7 refs.
Order from SLA $1.60 61-20599

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 26, p. 1861-1865.

DESCRIPTORS: *Roller bearings, Bearings, Design Lubrication.

Narcy, J. and Kermabon, R.
THE USE OF SELF-LUBRICATING BEARINGS IN WATER TURBINES. [1961] 11p.
Order from STT $10.00 STT-177-420

Trans. of la Technique Moderne (France) 1960, v. 52, no. 11, p. 513-517.

DESCRIPTORS: *Turbines, *Bearings, Lubrication, Water.

Watari, A. and Hirayama, N.
STUDIES ON AIR-DRIVE SPINDLES. II. TRANSVERSE SHAFT BEARING. [1961] 8p. (10 figs. omitted) 4 refs.
Order from SLA $1.10 61-10659

Trans. of unidentified article from an unknown Japanese source, n.p., 1953?

DESCRIPTORS: *Shafts, Bearings, *Gas bearings, Pressure, Design, *Turbines.

Pressure distribution of the air shaft bearing was theoretically calculated and compared with experimental data. The importance of air friction loss in the drive system was elucidated also. Under the operating shaft load it was found, both in theory and by experiment, that a fixed air membrane was formed inside the bearing aperture and that a shaft bearing effect was obtained. It is possible to design an air driven spindle system with very low power requirement. (See also 61-10658)

Watari, A. and Hirayama, N.
STUDIES ON AIR-DRIVE SPINDLES. III. CHARACTERISTICS. [1961] 5p. (4 figs. omitted) 2 refs.
Order from SLA $1.10 61-10658

Trans. of unidentified article from an unknown Japanese source, n.p., 1953?

DESCRIPTORS: *Shafts, Bearings, *Gas bearings, Pressure, Design, *Turbines.

Different models of air turbine spindles were experimentally investigated. Vibration behavior of spindles driven by air turbine is definitely superior to that observed with a belt drive. From the viewpoint of power consumption and noise the air bearing, reaction turbine model is much better. For application to spinning machines homogeneity of rotation of each spindle and motion of rotors will probably be problems. But the former difficulty can be controlled within 5% variation of the ratio by using a speed regulator. (Author) (See also 61-10659)

Manufacturing Equipment and Processes

Benden, F.
PRACTICAL APPLICATION OF THE ELECTRO EROSION FOR THE MANUFACTURE OF TOOLS AND DUPLICATE PIECES. [1961] 24p.
Order from STT $18.00 STT-175-180

Trans. of Macchine (Italy) 1960 [v. 15] Dec, p. 1097-1107.

DESCRIPTORS: *Tools, Manufacturing methods, *Electroerosive machining.

Hartz, H.
SPRUNG FOUNDATIONS FOR CHIPLESS FORMING MACHINES. Nov 61.
Order from BISI £6 5s BISI-2175

Trans. of VDI Ber[ichte] (West Germany) 1957, v. 24, p. 85-90.

DESCRIPTORS: *Foundations (Structures), *Machine shop practice, Metal forming presses, Machine tool industry.

Klasse, F. and Bosch, H.
RAPID ANALYSIS OF RAW MATERIALS AND INDUSTRIAL PRODUCTS BELONGING TO THE GENERAL SILICIC ACID-ALUMINA SYSTEM. [1961] 8p.
Order from ATS $11.95 ATS-18N55G

Trans. of Tonind[ustrie]-Z[ei]t[un]g (West Germany) 1959, v. 83, no. 2, p. 30-33.

DESCRIPTORS: *Chemical analysis, *Silicic acids, Oxides, *Industrial production, *Aluminum compounds.

Makelt, H.
TWO-ROLL STRAIGHTENING AND MULTI-ROLLER STRAIGHTENING MACHINES FOR ROUND BARS, TUBES AND SECTIONS. [1961] [25]p. 4 refs.
Order from SLA $2.60 61-16273

Trans. of Werkstattstechnik und Maschinenbau (Germany) 1956, v. 46, no. 12, p. 603-611.
A review trans. is available from SLA mi$1.80, ph$1.80 as 59-10270 [1959] 8p.

DESCRIPTORS: *Steel tubing, *Rods, *Metal forming presses, Drawing (Machine processing), Deformation, Steel industry, *Wire straighteners.

Unksov, E. P. and Rozanov, B. V.
PRESS FORGING EQUIPMENT. 3 Aug 61 [69]p. 6 refs. MCL-926/1 + 2.
Order from OTS or SLA $6.60 61-28506

Unedited rough draft trans. of mono. Kuznechno-Pressovoe Oborudovanie, Moscow, 1960, 55p. Abstract trans. available from LC or SLA mi$1.80, ph$1.80 as 61-19206, AID-61-17, 20 Feb 61, 2p.

DESCRIPTORS: *Metal forming presses, *Forge presses, Operation, Design, *Machines, *Machine tools, Chemical industry, Plastics, Labor, Automation, Electric power production, *Hydraulic presses, *Machine tool industry.

The book gives a brief description of the operational and manufacturing designs of basic types of press-forging equipment, and the trend of its development is analyzed. The book is intended for a diversified group of engineers, specialists and workers associated with the production and operation of press-forging equipment. (Soviet publisher's note)

Varlet, J.
CARE OF ROLLS FOR HOT ROLLING THIN SHEETS. [1959] 8p.
Order from SLA $1.10 61-20670

Trans. of Revue Universelle de Mines (France) [1945] ser. 9, v. 1, no. 2/[3] p. 118-121.
Another trans. is available from BISI & 3 as BISI-1229, 13 Mar 59.

DESCRIPTORS: *Sheets, Production, *Rolling mills, Operation, *Steel industry, Cast iron, Fracture (Mechanics), Rotation, Cooling, Temperature.

MATERIALS

Jahn, W.
TAGGED TANK BLOCKS FOR THE DETECTION OF TANK MATERIAL IN GLASS. [1961] 7p.
Order from ATS $11.60 ATS-60N55G

Trans. of Glastech[nische] Ber[ichte] (West Germany) 1959, v. 32, no. 3, p. 103-106.

DESCRIPTORS: *Glass, Impurities.

Krzheminskii, S. A.
INVESTIGATION OF THE INFLUENCE OF KERATIN AND GLUE RETARDERS ON THE PROPERTIES OF GYPSUM HEMIHYDRATE. [1961] 10p.
Order from ATS $15.90 ATS-67N51R

Trans. of Resp[ublikanskii] Nauch[no]-Issledovatel'-[skii] Inst[itut] Mestnykh Stroitel'[nykh] Materialov. Sbornik Trudov (USSR) 1959, no. 16, p. 90-99.

DESCRIPTORS: *Gypsum, *Hydrates, Physical properties, *Keratin.

Reichle, R.
NEW ECONOMIC (GAS-FIRED INFRA-RED) PAINT DRYING PLANT. 1961, 1800 words.
Order from TTIS $10.00 TTIS FA56

Trans. of Industrie-Lackier-Betrieb (West Germany) 1961, v. 29, June, p. 191-194.

DESCRIPTORS: *Paints, *Infrared equipment, Finishes, Industrial plants.

Sobinyakova, N. M.
ESTIMATION OF THE BINDING POWER OF BITUMINOUS COKE BY THE PENDULUM METHOD. [1961] 3p. 7 refs.
Order from OTS or SLA $1.10 61-20412

Condensed trans. of Zavodskaya Laboratoriya (USSR) 1946, v. 12, p. 203-205.

DESCRIPTORS: *Coke, *Binders, Test methods.

Zieger, H.
EXAMINATION OF THE BEHAVIOR OF SOLVENTS AND BINDER SOLUTIONS DURING ELECTROSTATIC SPRAYING. 1961, 3000 words.
Order from TTIS $25.00 TTIS 2312

Trans. of Plaste und Kautschuk (Germany) 1961, v. 8, July, p. 387-391.

DESCRIPTORS: *Sprays, Organic solvents, Binders, Solutions.

Wittekindt, W.
ACID-RESISTING "OCRAT" CONCRETE. [1961] 7p.
Order from SLA $1.10 61-20260

Trans. of Zement-Kalk-Gips (West Germany) 1952 [v. 5] no. 7, p. 203-205.

DESCRIPTORS: *Concrete, Acids, Resistance, Mechanical properties.

Ceramics and Refractories

Jahn, W.
THE EFFECT OF CERIUM, ARSENIC, AND ANTIMONY ON THE RADIATIVE DISCOLORATION OF GLASSES BY X- AND γ- RADIATION. [1961] 12p.
Order from ATS $21.40 ATS-64N55G

Trans. of mono. Beitrage zur Angewandten Glasforschung, Stuttgart, 1959, p. 304-317.

DESCRIPTORS: *Radiation effects, *Glass, Discoloration, Radiation damage, *Cerium, *Arsenic, *Antimony.

Slavyanskii, V. T., Krestnikova, E. N., and Proskuryakov, M. V.
A NEW METHOD FOR THE ANALYSIS OF GAS IN GLASS. [1961] 7p.
Order from ATS $12.50 ATS-89N53R

Trans. of Steklo i Keramika (USSR) 1960, v. 17, no. 6, p. 29-33.

DESCRIPTORS: *Glass, Chemical analysis, *Gases.

Fuels, Lubricants, and Hydraulic Fluids

INSULATING OILS FOR TRANSFORMERS. [1961] 14p.
Order from ATS $22.10 ATS-70N53F

Trans. of Assoc[iation] Franç[aise des] Techniciens [du] Pétrole. Bull[etin] 1961, no. 146, p. 259-272.

DESCRIPTORS: *Transformers, Lubrication, *Oils.

Beck, K. G.
MODERN COKING TECHNOLOGY. Oct 61.
Order from BISI £4 BISI-2436

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, Feb, p. 195-199.

DESCRIPTORS: *Coke, Production.

Il'in, Yu. V.
FLOW OF GAS THROUGH POROUS METAL WALLS. 1 Sep 61 [15]p. (3 refs. omitted) 2 refs.
MCL-1166/1 + 2. AD-264 519
Order from OTS or SLA $1.60 61-28492

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1959, no. 1, p. 65-73.

DESCRIPTORS: *Porous metals, *Walls, *Gas flow, Viscosity.

In the planning of details utilizing porous cooling, it is necessary to know the hydraulic characteristics of the porous medium. In the present paper the flow of gases through porous metal walls without heat exchange is considered. (Author)

Leather and Textiles

Chilikin, M. M. and Ivannikova, E. A.
PETROLEUM PRODUCTS AS AIDS IN SPINNING. [1961] 4p.
Order from OTS or SLA $1.10 61-20407

Condensed trans. of Tekstil'naya Promyshlennost' (USSR) 1945 [v. 5] no. 7, p. 18-22.

DESCRIPTORS: *Petroleum, Effectiveness, *Threads, Processing.

Hendrix, H.
METHODS OF DETECTING CHANGES IN THE INTERNAL STRUCTURE OF SYNTHETIC FIBERS. [1961] 9p.
Order from ATS $13.90 ATS-27N54G

Trans. of Z[eitschrift fur die] Ges[amte] Textil-Ind[ustrie] (West Germany) 1960, v. 62, no. 21, p. 921-924.

DESCRIPTORS: *Synthetic fibers, Microstructure, Fibers, Chemical analysis.

Hornduff, G. von and Magister, G.
PROCESS FOR REDUCING THE BLEACHING DURATION IN ESTER-ACTIVATED SODIUM CHLORITE BLEACHING BATHS. 1961, 500 words.
Order from TTIS $4.00 TTIS NS 14

Trans. of East Germany patent 21,562, appl. 4 July 59, pub. 14 July 61.

DESCRIPTORS: *Bleaching agents, Bleaching, Sodium compounds, Esters, *Chlorites.

Novoderezhkin, P. L.
IDENTIFICATION OF CHEMICAL FIBERS BY OPTICAL METHODS. [1961] 5p.
Order from ATS $9.00 ATS-58N54R

Trans. of Tekstil['naya] Prom[yshlennost'] (USSR) 1961, v. 21, no. 1, p. 43-47.

DESCRIPTORS: *Fibers, Chemical properties, Identification, Optical analysis, *Synthetic fibers.

Photographic Materials

Abramova, T. V. and Chel'tsov, V. S.
THE RELATIONSHIP BETWEEN THE PRINCIPAL SENSITOMETRIC CHARACTERISTICS OF THE PROPERTIES OF PHOTOGRAPHIC EMULSIONS IN COLOR DEVELOPMENT. [1961] 8p.
Order from ATS $10.75 ATS-08N55R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel['skii] Kinofotoinst[itut]. Trudy (USSR) 1959, no. 29, p. 34-42.

DESCRIPTORS: *Photographic emulsions, Sensitivity, *Color photography, Photographic chemicals.

Arnol'd, Ts. S.
INVESTIGATION OF THE PROCESSING OF NEGATIVE-TYPE COLOR FILM. [1961] 14p.
Order from ATS $19.25 ATS-09N55R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel['skii] Kinofotoinst[itut]. Trudy (USSR) 1959, no. 29, p. 43-58.

DESCRIPTORS: *Color film, Processing, Photographic film, Color photography, Films.

Chartoriiskii, B. A. and Chel'tsov, V. S.
CHARACTERIZATION OF THE PHOTOGRAPHIC ACTIVITY OF DIFFUSING CHROMOGENIC COUPLERS. [1961] 7p.
Order from ATS $10.35 ATS-10N55R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel['skii] Kinofotoinst[itut]. Trudy (USSR) 1959, no. 29, p. 16-23.

DESCRIPTORS: *Color film, Photographic emulsions, Photographic film, Films.

Deryagin, B. V. and Levi, S. M.
THE PHYSICAL CHEMISTRY OF COATING THIN LAYERS ON A MOVING SUPPORT. [1961] 75 refs.
Order from OTS or SLA $16.50 61-20021

Trans. of unidentified mono. pub. by Akademiya Nauk SSSR. Institut Fizicheskoi Khimii, Moscow, 1959, 209p.

DESCRIPTORS: *Coatings, *Photographic emulsions, Photographic film, *Motion picture film, Photographic paper, Wetting agents, Theory, Gelatin, Viscosity, Surface tension, Automation, Physical chemistry, Thin films, Films, Photographic chemicals.

A process suitable for automation was developed for coating light-sensitive layers, filter layers, protective or other thin liquid layers on a flexible support (motion picture film base or photographic paper). Extensive theoretical studies on coating and wetting preceded the development of the coating technology. The coating studies make it possible to calculate the thickness of coated emulsions by knowing the rheological properties and the surface tension of the liquid and the coating conditions, and to solve all the problems of coating technology by calculations. A "limiting rule" was worked out that makes it possible to increase the velocity, and thereby increase the productivity of coating machines by 2 or 3 times, and to obtain coated emulsions with a monocrystalline layer of silver halide crystals. Wetting studies showed that as the velocity increases the marginal angle reaches a boundary value of 180°, beyond which contact between the liquid and the substratum deteriorates. Total nonwetting, in which a positive coefficient of air spreads along the base in the presence of the liquid, is an essentially nonuniform kinetic process. Thermodynamic formulas show that a decrease in the surface tension of the liquid at its boundary face with the air must (1) improve static wetting (decrease the marginal angle or increase the coefficient of spreading), and (2) aid kinetic nonwetting (by decreasing the speed of nontotal wetting).

Grenishin, S. G. and Cherkasov, Yu. A.
SPECTRAL SENSITIVITY OF ELECTROPHOTOGRAPHIC LAYERS. [1961] 8p. 8 refs.
Order from OTS or SLA $1.10 61-18313

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 6, p. 433-438.

DESCRIPTORS: *Electrophotography, *Semiconductors, Selenium, Zinc compounds, Oxides, Cadmium compounds, Sulfides, Sensitivity, Spectrographic analysis.

The spectral sensitivity was measured of electrophotographic layers in which selenium, zinc oxide, and cadmium sulfide were used as semiconductors. It can be concluded that selenium layers with tellurium impurity have the highest light sensitivity within the visible region. At the same time adding tellurium to a selenium layer displaces the threshold of spectral sensitivity appreciably into the long wavelength region of the spectrum. All electrophotographic layers, with the exception of layers from cadmium sulfide, have approximately the same light sensitivity within the ultraviolet region.

Kheinman, A. S. and Chel'tsov, V. S.
INVESTIGATION OF THE PROCESSES OF COLOR DEVELOPMENT. [1961] 10p.
Order from ATS $17.75 ATS-11N55R

Trans. of Vsesoyuz[nyi] Nauch[no]-Issledovatel'[skii] Kinofotoinst[itut]. Trudy (USSR) 1959, no. 29, p. 5-15.

DESCRIPTORS: *Color photography, Photography.

Romer, V.
GRAININESS OF THE PHOTOGRAPHIC IMAGE, I. [1961] 12p. 20 refs.
Order from OTS or SLA $1.60 61-20072

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 225-230.

DESCRIPTORS: *Photographic film, Films, Processing, *Photographic emulsions, Physical properties.

The role and concept of graininess and present theories of graininess are reviewed.

Sheberstov, V. I., Borodkina, M. S., and Donatova, V. P.
INVESTIGATION OF THERMAL RELATIONSHIPS OF PHOTOGRAPHIC DEVELOPMENT. VI. REDUCTION OF SILVER BROMIDE SOLS AND SILVER SALTS OF BENZOTRIAZOLE AND 5-METHYL-7-HYDROXY-2, 3, 4-TRIAZAINDOLIZINE. [1961] 5p. 3 refs.
Order from OTS or SLA $1.10 61-18311

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 5, p. 331-333.

DESCRIPTORS: Photographic film, Processing, *Silver compounds, *Bromides, Colloids, Reduction, Azoles, Methyl radicals, Indoles.

A developer solution was added to a freshly prepared sols protected by a small amount of gelation. The mixture was allowed to stand for different periods of time at 15° or 25°C, while the mixture was agitated continuously. At intervals, samples were taken from the mixture. The content of reduced silver was determined. The silver triazaindolizine salt (AgSt) was reduced considerably faster, and required less activation energy, than AgBr, while the silver benzotriazole salt (AgBt) was reduced considerably slower. These results confirm the previous assumption (Zhur. Nauch. i Priklad. Fot. i Kinematograffi 3: 112-116, 1958; available in translation from LC or SLA as 59-10774) that a higher reaction activation energy is required for the reduction of the antifoggant (benzotriazole) than for the reduction of silver bromide. The thermal coefficients and the reduction activation energy of the investigated salts were decreased when the development time was increased. This is explained by a catalytic action of silver, the mass of which is increased during the reaction. A decrease in the thermal coefficients up to the diffusion value ($a \leqslant 1.5$) was observed, however, only when AgSt was reduced.

Rubber and Elastomers

Lur'e, M. A.
PETROLEUM AS A SOURCE OF RAW MATERIAL FOR PREPARATION OF RUBBER-FORMING COMPOUNDS. [1961] [8]p. 35 refs.
Order from OTS or SLA $1.10 61-16874

[Condensed] trans. of Uspekhi Khimii (USSR) 1940, v. 9, no. 6, p. 609-628.

DESCRIPTORS: *Synthetic rubber, Preparation, Materials, *Petroleum, *Hydrocarbons, Butadienes.

The chemical composition of the charge has an essential effect on the yield of 1, 3-butadiene in thermal conversions of oil products. Up to 2.5% 1, 3-butadiene can be obtained from mazut, 3.7% from crude oil, 3.9% from solar oil, 5.2% from kerosene and 7.5-11% from gasolines of different types. The optimal temperature for production of 1, 3-butadiene from oil products is within 715-755° and may be reduced with the aid of catalysts. Reduced pressure in the reaction zone and rapid cooling of the hot gases emitted from the reaction zone have a favorable effect on the yield of butadiene. (Author)

Petrenko, A. V.
SOVIET SYNTHETIC RUBBER INDUSTRY (ACHIEVEMENTS IN 1939 AND OBJECTIVES FOR 1940). [1961] 6p.
Order from OTS or SLA $1.10 61-20410

Trans. of Kauchuk i Rezina (USSR) 1940, no. 4/5, p. 1-5.

DESCRIPTORS: *Synthetic rubber, Rubber, Industry, USSR.

Wood and Paper

Ilinskaya, A. A.
THE INFLUENCE OF KRAFT LIQUOR SULFIDITY ON THE PROPERTIES OF PULP FOR CONDENSER PAPER. [1961] [8]p. 15 refs.
Order from OTS or SLA $1.10 61-16535

Trans. of Bumazh[naya] Prom[yshlennost'] (USSR) 1960 [v. 35] no. 2, p. 2ff.

DESCRIPTORS: *Wood pulp, Processing, Chemical properties, Physical properties, *Black liquor, *Sulfides, Chemical reactions, *Paper, Materials.

Experiments indicate that kraft liquor sulfidity is an important factor for the chemical and physico-mechanical properties of pulp. To obtain high D.P. sulfate pulp with good mechanical properties, the sulfidity of kraft liquor should be kept at a level of 30-35%. This can be achieved by the recovery of sulfur from the spent liquor. There are several means of sulfur recovery: acidification of black liquor; acidification of condensed or uncondensed bad smelling products, obtained by vacuum distillation; and finally the addition of elementary sulfur to the liquor.

Jayme, G. and Demmig, W.
THE DISTRIBUTION OF AUXILIARY SUBSTANCES IN THE CIRCULATION OF A PAPER MACHINE AT APPLICATION OF AN ACID RICH SIZE (HAGOID). Apr 61, 9p. (4 figs. omitted) 5 refs.
Order from SLA $1.10 61-18268

Trans. of das Papier (West Germany) 1960, v. 14, no. 7, p. 278-283.

DESCRIPTORS: *Paper, Processing, Machines, Operation.

Research showed that the retention of the rosin acids when using a size with high free rosin content need not be worse than when using an almost completely saponified rosin size. As the waste water contains no dissolved rosin acids and all rosin is contained in the suspended solids the rosin acid concentration can be brought down to 9.4 mg/l with the help of a flotation save-all and with a sedimentation filter it can be lowered further to 2.9 mg/l. The toxicity limit for fish lies between 5 and 10 mg/l (according to Ebeling) so that the rosin acid concentration established at the time of taking the samples cannot cause adverse effects. The total suspended solids content of the waste water was, when using a Schleicher & Schüll Nr. 589 filter 48.3 mg/l, which is just within the tolerable limits. (Author)

Mazing, L. A. and others.
THE VOITH SAVEALL IN OPERATION. [1961] 3p. (1 diagr. omitted).
Order from SLA $1.10 61-18569

Trans. of Bumazh[naya] Prom[yshlennost'] (USSR) 1960 [v. 35] no. 8, p. 22-23.

DESCRIPTORS: *Paper, Processing, *Machines, Operation.

MATHEMATICS

Evgrafov, M. A.
ASYMPTOTIC ESTIMATES AND ENTIRE FUNCTIONS. 1961, 192p.
Order from GB $8.00

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Functions, Numerical analysis, Theory

Hartmen, S. and Mikusinski, J.
THE THEORY OF MEASURE AND LEBESQUE INTEGRATION. International Series of Monographs on Pure and Applied Mathematics, v. 15. Sep 61, 176p.
Order from PP $5.00

Trans. of unidentified Polish mono., n. p., n. d.

DESCRIPTORS: *Measure theory, *Integration, Series, *Mathematics, *Textbooks.

Krasnosel'skii, M. A.
CONVEX FUNCTIONS AND ORLICZ SPACES. 1961, 320p.
Order from GB $11.00

Trans. of mono. [Vypuklya Funktsii i Prostranstva Orlicha, Moscow, 1958, 271p.]
Another trans. is available from OTS $3.00 as AEC-tr-4311 [1961] 218p.

DESCRIPTORS: *Functions, Theory, Operators(Mathematics), Integral equations, Functional analysis, Textbooks, USSR

Postnikov, M. M.
FUNDAMENTALS OF GALOIS THEORY. 1961, 196p.
Order from GB $8.00

Trans. of [Osnovy Teorii Galua, Moscow, 1960, 124p.]

DESCRIPTORS: *Groups (Mathematics) *Algebra

Ventzel, E. S.
ELEMENTS OF THE THEORY OF GAMES. 1961, 86p.
Order from GB $4.50

Trans. of [Elementy Teorii Igr, Moscow, 1959, 66p.].

DESCRIPTORS: *Games theory, Probability

Vorob'ev, Yu. V.
MOMENTS METHOD IN APPLIED MATHEMATICS. 1961, 300p.
Order from GB $9.50

Trans. of [Metod Momentov v Prikladnoi Matematike, Moscow, 1958, 186p.].

DESCRIPTORS: *Applied mathematics, Numerical methods and procedures, Operators (Mathematics) Integral equations, Differential equations, Equations

Computing Devices

Coroller, P.
SIMULATION OF A SYNCHRONOUS MACHINE WITH AN ANALOGUE COMPUTER. Oct 61.
Order from BISI £3 5s BISI-2406

Trans. of de Ingenieur (Netherlands) 1960 [v. 72] 16 Sep, p. E103-E109.

DESCRIPTORS: *Machines, *Analog computers, Computers, Simulation.

Dhen, W.
ELEMENTS FOR INDUSTRIAL ANALOGUE COMPUTER TECHNIQUE. Nov 61.
Order from BISI £4 10s BISI-2443

Trans. of AEG Mitt[eilungen] (Germany) 1960, v. 50, Aug/Sep, p. 427-432.

DESCRIPTORS: *Analog computers, *Industrial research, *Computers.

Pages, R.
ARITHMETIC UNIT AND THE UTILIZATION THEREOF IN COMPUTERS, tr. by P. C. C. 12 Oct 61, 6p. (1 fig. omitted).
Order from OTS or SLA $1.10 61-28956

Trans. of French 2nd. addition patent 70, 956 (to patent 1,141,001) gr. 12, cl. 3, int. cl. G 06 F, by Société Nouvelle de l'Outillage R. B. V. et de la Radio-Industrie, appl. 18 Jan 57, granted 16 Mar 59, pub. 30 Sep 59.

DESCRIPTORS: *Digital computers, Computers, Circuits, Magnetic cores, Control systems, Computer logic, Programming, Design.

This invention is substantially characterized by the association of the program generator of the principal patent, which discloses two shift circuits comprizing, in addition to the elements normally constituting said circuits, auxiliary bistable elements associated with a conductor network forming a second cross grating providing for interconnections corresponding to possible step jumps in each program step in connection with a conditional instruction, said auxiliary bistable elements being also connected to the step jump control element, i.e., the arithmetic unit itself. The invention is further characterised by balancing of the shift circuits associated with said program generator. (Author) (See also 61-28958)

Zotov, L. and Voskresenskii, A.
BIONICS: A NEW SCIENCE (Bionika: Novaya Nauka). 14 Sep 61 [6]p. JPRS: 10142.
Order from OTS or SLA $1.10 61-28507

Trans. from Izvestiya (USSR) 1961, 31 Aug, p. 2.

DESCRIPTORS: *Bioelectronics, Biology, *Cybernetics, Ultrasonics, Electronic equipment, Computers, Physiology.

MECHANICS

ACTA MECHANICA SINICA, 1958, VOL. 2, NO. 1: SELECTED TRANSLATIONS. 1 June 61 [94]p. 51 refs. JPRS: 9386.
Order from OTS or SLA $8.60 61-23598

Trans. of Li Hsüeh Hsüeh Pao (Chinese People's Republic) 1958, v. 2, no. 1, p. 43-88.

DESCRIPTORS: *Mechanics, Periodicals, China, Brass, Brass tubing, Plasticity, Elasticity, Stresses, Deformation, Beams, Metal plates, Stability, Theory, Calculus of variations.

Contents:
Plastic stress-strain relations of an α-brass, by Yang Nan-sheng
On the longitudinal stability of continuous thin-walled beams, by Hu Hai-ch'ang
On a variational principle in the theory of dynamical stability of elastic systems, by Hu Hai-ch'ang
The theory of the oblique-angled anisotropic plate and its use on inclined bridges, by Li Kuo-hao.

SYSTEMS, ARRANGEMENTS, AND ELEMENTS OF PNEUMATIC AND HYDRAULIC AUTOMATIC DEVICES. [1961] 286p. (figs. omitted) refs. H-6553; JPRS (R-1495-D).
Order from OTS $4.00 61-31669

Trans. of mono. Sistemy, Ustroistva i Elementy Pnevmo- i Gidroavtomatkik, Moscow, 1959, 235p.

DESCRIPTORS: *Pneumatic systems, *Pneumatic devices, Automatic, Control systems, Machine tools, Production, *Hydraulic systems, *Pneumatic servomechanisms, Manometers, Transducers, Relays, Amplifiers, Speed regulators, *Hydraulic power systems, Design, Operation.

Contents:
Pneumatic aggregate system of the KB of the TsMa, by M. S. Shneerov
New small size pneumatic instruments for automatic control and regulation developed in "NIITeplopribor", by I. F. Kozlov
Hydraulic equipment for automatic machine tool lines, by L. S. Bren
Elements of hydraulic instruments, by B. F. Stupak
A three-component regulating block of the KB TsMa, by M. L. Podgoetskii and E. M. Braverman
A small-size hydraulic regulating block of the IAT as USSR, by V. M. Dvoretskii
Questions of the designing of primary instruments, differential manometers with pneumatic force balancing, by S. M. Zasedatelev and V. A. Rukhadze
Electropneumatic transducers of the IAT as USSR, by Yu. V. Krementule
Static characteristics of a pneumatic relay with constant pressure drops at the throttles, by V. N. Dmitriev
Differential manometers-transmitters with pneumatic force balancing (a survey of designs of foreign firms) by S. M. Zasedatelev and V. A. Rukhadze
Hydraulic power follower drive for general industrial use, by V. P. Temnyi
Hydraulic universal speed regulator (URS) by A. F. Arkhangel'skii
Equations for a system of stabilization, the hydraulic motor of which is connected with the control element by hydraulic lines, by S. A. Babushkin
Pneumatic proportion regulators without mechanical dividers, by G. T. Berezovets
Concerning the fulfillment of nonlinear transformations in pneumatic systems using "nozzle-tube" type elements, by L. A. Zalmanzon and A. I. Semikova
On the possibility of creating a pneumatic regulator with automatic adjustment to load, by T. K. Berends and A. A. Tal'
Pneumatic extremal regulator of the IAT as USSR, by Yu. I. Ostrovskii
Automatic arrangement for air supply, by V. S. Prusenko
On the calculation of the static characteristics of a "nozzle-valve" element, by E. A. Andreeva
Results of experimental and theoretical studies of "nozzle-valve" type control devices, by N. P. Shumskii
Laminar air flow in flat capillary channels at high velocities, by A. V. Bogacheva
Obliteration and methods to combat it, by I. N. Kichin
On the change of effective areas of fabric diaphragms, by V. V. Afanas'ev
Investigation of the characteristics of diaphragms used in regulator sensing elements, by Yu. I. Mach and G. P. Stepanov.

Broecker, E.
MIXING OF LIQUID OR GAS STREAMS AT NEARLY CONSTANT TOTAL PRESSURE. [1961] 17p.
Order from ATS $26.40 ATS-86N52G

Trans. of Forsch[ung auf dem] Gebiete [des] Ingenieurw[esens] (West Germany) 1958, v. 24, no. 6, p. 169-177.

DESCRIPTORS: *Fluid flow, *Gas flow, Pressure, Mixtures.

Broecker, E.
MIXING OF LIQUID OR GAS STREAMS AT NEARLY CONSTANT TOTAL PRESSURE. [1961] 16p.
Order from ATS $24.95 ATS-87N52G

Trans. of Forsch[ung auf dem] Gebiete [des] Ingenieurw[esens] (West Germany) 1959, v. 25, no. 1, p. 17-25.

DESCRIPTORS: *Fluid flow, *Gas flow, Pressure, Mixtures.

Riz, P. M.
ELASTIC CONSTANTS IN THE NONLINEAR THEORY OF ELASTICITY (Ob Uprugikh Konstantakh v Nelineinoi Teorii Uprugosti). [1961] [4]p. 1 ref. [JPRS] R-493-N.
Order from OTS or SLA $1.10 61-19573

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1947, v. 11, no. 4, p. 493-494.

DESCRIPTORS: *Elasticity, Theory, Deformation, Stresses.

The possibility is indicated of selecting additional elastic constants in such a way as to describe, with a considerable degree of approximation, the relationship between the deformations and the stresses in an isotropic body. (Author)

Rozovskii, I. L.
FLOW OF WATER IN BENDS OF OPEN CHANNELS, tr. by Y. Prushansky. 1961, 233p. 93 refs. PL-480 Int.
Order from OTS $2.50 60-51133

Trans. of mono. Dvizhenie Vody na Povorote Otkrytogo Rusla, Kiev, 1957 [187p.].

DESCRIPTORS: *Estuaries, *Inland waterways, *Hydraulic research, Fluid flow, Turbulence, Turbulent flow, Laminar boundary layer.

General equations for turbulent flow in the bend of a wide river-bed are derived. Formulas are obtained for computing the components of transverse circulation in wide riverbeds with smooth or rough bottom. A method is given for computing the development and decay of circulation, for the distribution of longitudinal velocity components in the bend and beyond it. A simple formula is obtained for determining the slope angle of bottom currents and a method is proposed for constructing the trajectories of bottom currents in artificial structures and in natural water courses. A method is given for computing nonscouring velocities in canal curves. The book is intended for scientific workers in the field of hydraulics of open channels, hydraulic engineers and river transportation engineers. (Soviet publisher's note)

Ferrari, Carlo.
THE LAMINAR BOUNDARY LAYER AT HYPERSONIC SPEEDS (Sullo Strato Limite Laminare in Corrente Ipersonica) tr. by R. H. Cramer. Sep 61, 56p. 7 refs. NASA Technical Trans. F-71; AD-263083.
Order from OTS $1.50 61-31611

Trans. of l'Aerotecnica (Italy) 1956, v. 36, no. 2, p. 68-94.

DESCRIPTORS: *Laminar boundary layer, *Hypersonic flow, *Airfoils, Heat transfer, Pressure, Deflection, Gas flow, Mathematical analysis, Partial differential equations, Integral equations, *Hypersonics

A theoretical study of the laminar boundary layer on an airfoil immersed in a hypersonic stream is made under the assumption that (a) there is no heat transfer to the wall, and (b) there is zero gradient of pressure normal to the direction of development of the layer along the wall. Numerical applications are presented to illustrate the use of the theory for flow along a flat plate and for flow along a curved wall for which the shape is specified by certain governing profile parameters. (NASA abstract)

Motulevich, V. P.
HEAT EXCHANGE AT THE FRONTAL POINTS OF BLUNT BODIES WASHED BY A SUPERSONIC GAS FLOW. 7 Aug 61 [17]p. 13 refs. MCL-1108/1+2.
Order from OTS or SLA $1.60 61-28704

Unedited rough draft trans. of mono. Konvektivnyi i Luchistyi Teploobmen, Moscow, 1960, p. 16-24.

DESCRIPTORS: *Blunt bodies, Heat transfer, Supersonics, *Supersonic flow, Numerical analysis, Gas flow.

A simple approximate method is proposed for calculating the heat flux at the frontal point of plane- and axially symmetric bodies washed by a supersonic gas flow. The method is based on an analysis of the heat-exchange process in the central channel of the flow and on the assumption that there is no viscosity effect in the vicinity of the frontal point. By an appropriate choice of the determining parameters a satisfactory coincidence with the experiment is obtained for models of different shapes and sizes, even when there is a considerable change in the parameters of the incident flux. (Author)

METALLURGY

USSR CONFERENCES ON WELDING AND HEAT TREATMENT OF METALS: SELECTED TRANSLATIONS. 7 Aug 61, 20p. JPRS: 4841.
Order from OTS $0.50 61-31579

Trans. of # Svarochnoe Proizvodstvo (USSR) 1961, no. 2, p. 41-43; # Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1961, no. 2, p. 59-61; # Avtomaticheskaya Svarka (USSR) 1961 [v. 14] no. 5, p. 95-96.

Contents:
All-Union Scientific-Technical Conference on the Overall Mechanization and Automation of the Welding Industry, by V. M. Kondratovich
All-Union Scientific-Technical Conference on the Application of Induction Heating in the Heat Treatment of Metals, by M. G. Lozinskii
Gor'kii Oblast Conference of Welders, by Yu. A. Yuzvenko.

Becker, H.
RAPID TEST OF THE MACHINABILITY OF FREE CUTTING STEELS USING THE WEIGHT-FEED METHOD. Sep 61.
Order from BISI ₤3 10s BISI-2185

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81 [no. 1] p. 46-50.

DESCRIPTORS: *Steel, Machining, *Cutting tools.

Dekhtyar, I. Ya. and Mikhalenkov, B. S.
THE EFFECT OF TRI-AXIAL PRESSURE ON THE ATOMIC MAGNETIC MOMENTS OF IRON, NICKEL AND OF THE ALLOY Fe - 36% Ni. Sep 61.
Order from BISI ₤4 BISI-2249

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 6, p. 44-51.

DESCRIPTORS: Iron, *Nickel, *Iron alloys, Hydrostatic pressure, Magnetic moments, Gallium, *Nickel alloys, Alloys.

Esmarch, W. and others.
THE DEGASSING OF LIGHT METAL ALLOYS BY MEANS OF SONIC VIBRATIONS. Oct 61.
Order from BISI ₤3 10s BISI-2336

Trans. of mono. Wissenschaftliche Veröffentichungen aus den Siemens-Werken [Berlin] 1940, p. 78-87.

DESCRIPTORS: *Degasification, *Vibration, *Aluminum alloys, *Magnesium alloys, Metals, Vibration.

Feldmann, K. and Frank, K.
MANUFACTURE AND PROPERTIES OF ATOMISED, STABILISED FERRO-SILICON 45% Si. Sep 61.
Order from BISI ₤2 15s BISI-2321

Trans. of Schweissen [und] Schneiden (West Germany) 1960, v. 12, Dec, p. 514-517.

DESCRIPTORS: *Iron alloys, *Silicon alloys, Atomization, Stabilization, Manufacturing methods.

Glikman, E. S.
ORE BLENDING AT BLAST-FURNACE AND SINTER PLANTS. Oct 61, 2200 words.
Order from HB $5.90 HB-5148

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 2, p. 191-196.

DESCRIPTORS: *Blast furnaces, *Sintering furnaces, *Ores, Processing, Mixtures.

Görgen, R.
OPERATING EXPERIENCE WITH OPEN-HEARTH FURNACES USING OIL OR A MIXTURE OF OIL AND COLD OVEN GAS. Oct 61.
Order from BISI ₤4 15s BISI-2407

Trans. of Stahl [und] Eisen (West Germany) 1959, v. 79, 15 Oct, p. 1483-1491

DESCRIPTORS: *Open hearth furnaces, Operation, Fuel oils, Mixtures, Gases, *Fuels, Oils, Ovens.

Gubin, G. V. and Tsylev, L. M.
ON THE REDUCTION OF IRON ORE-COAL PELLETS. Oct 61, 2700 words.
Order from HB $7.80 HB-4924

Trans. of Akad[emiya Nauk] SSSR. Institut Metallurgii. Trudy, 1958, no. 3, p. 63-68.

DESCRIPTORS: Reduction, *Iron, *Ores, *Coal, *Pellets, Blast furnaces, Gases.

Guthmann, K.
THE PROBLEM OF AIR POLLUTION WITH SPECIAL REFERENCE TO IRON AND STEEL WORKS. III. THE REMOVAL OF DUST FROM FLUE GASES OF ARC FURNACES. 1959 [51]p. (2 tables omitted) 56 refs.
Order from SLA $4.60 61-18795

Trans. of Radex-Rundschau (Austria) 1958, no. 7, p. 323-347.

Portions of this report will not reproduce well.

DESCRIPTORS: Iron industry, Steel industry, *Particles, *Disposal, Gases, *Air, *Contamination, Industrial plants, *Electric filters, *Particulate filters, Waste gases.

Guthmann, K.
THE PROBLEM OF CLEAN AIR, WITH SPECIAL REFERENCE TO THE IRON AND STEEL INDUSTRY. I. [MEASUREMENT, EFFECTS, REGULATIONS]. [1959] [46]p. 14 refs.
Order from SLA $4.60 61-18797

Trans. of Radex-Rundschau (Austria) 1958, no. 1, p. 3-29.

DESCRIPTORS: Iron industry, Steel industry, Toxicity, *Social sciences, *Criminal jurisdiction, *Legislative liaison, Air, Cleaning, *Particles, Gases, Disposal, Urban areas, Rural areas, *Industrial plants, *Waste gases, Monoxides, Control, Sulfur compounds, Oxides.

Guthmann, K.
THE PROBLEM OF CLEAN AIR, WITH SPECIAL REFERENCE TO THE IRON AND STEEL INDUSTRY. II. EXTRACTION OF DUST FROM THE WASTE GAS OF OPEN HEARTH FURNACES. 1959 [39]p. 45 refs.
Order from SLA $3.60 61-18796

Trans. of Radex-Rundschau (Austria) 1958, no. 6, p. 253-276.

DESCRIPTORS: Iron industry, Steel industry, Air, Cleaning, Industrial plants, *Waste gases, *Open hearth furnaces, *Particles, Separation, Industrial plants, Oxygen, Ventilation, Electrostatics, Particulate filters.

Hartmann, Fritz.
THE PHYSICAL BEHAVIOUR OF ORES AND ADDITIONS IN THE BLAST FURNACE. Rept. no. 195 of the [Blast Furnace Committee] of the Verein Deutscher Eisenhüttenleute. [1961] [14]p. 13 refs.
Order from SLA $1.60 61-18535

Trans. of Stahl und Eisen (Germany) 1940, v. 60, 14 Nov, p. 1021-1027.

DESCRIPTORS: *Iron, *Ores, Slags, Coke, Calcium compounds, Oxides, Processing, *Metallurgy, Physical chemistry, *Blast furnaces, Operation.

Keller, W.
INVESTIGATION OF FURNACE CHAMBER PRESSURE IN CONTINUOUS PUSHERTYPE FURNACES AND COMPARISON WITH TESTS ON MODELS. Nov 61.
Order from BISI £3 15s BISI-2417

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81 [no. 11] p. 720-724.

DESCRIPTORS: *Pusher furnaces, *Combustion chambers, Pressure, Model tests, Test facilities.

Kidin, I. N.
INDUCTION HARDENING OF METAL-POWDER COMPACTS (ESPECIALLY IRON POWDERS). Aug 61, 3600 words.
Order from HB $9.85 HB-5094

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1960, no. 11, p. 113-120.

DESCRIPTORS: *Metal powders, *Iron, Heat treatment, Powder metallurgy, Hardening, Powders.

Korolev, A. A.
A MORE ACCURATE METHOD OF CALCULATING (THE TORQUE AND BENDING MOMENT OF) SHEET STRAIGHTENING MACHINES FOR ROLLING MILLS [Utochennaya Metodika Rascheta Listoprabil'nikh Mashin]. Oct 61.
Order from BISI £2 10s BISI-2394

Trans. of Vestnik Mash[inostroeniya] (USSR) 1958 [v. 38] no. 10, p. 23-30.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 60-23799, RTS-1163, Aug 60 [20]p.

DESCRIPTORS: *Sheets, Deformation, *Rolling mills, Mathematical analysis, Machines, Torque.

Kulikov, I. S. and Tsyilev, L. M.
THE BEHAVIOR OF SULPHUR IN GASES DURING MELTING IN THE BLAST FURNACE. [1961] [23]p. (14 figs. 6 tables omitted) 14 refs.
Order from OTS or SLA $2.60 61-18869

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1954, no. 12, p. 102-119.

DESCRIPTORS: *Ores, *Coke, *Cast iron, Melting, *Sulfur, Chemical reactions, Determination, *Blast furnaces, Gases

Kustanovich, I. M.
SPECTROGRAPH FOR THE ANALYSIS OF MOLTEN METAL AND SLAG (SHORT DESCRIPTION OF IMMERSION SPECTROGRAPH DEVELOPED AT MAGNITOGORSK). Oct 61.
Order from BISI £1 BISI-2370

Trans. of Lvov U. Fiz[icheskii Sbornik (USSR) 1958, no. 4(9) p. 451-452.

DESCRIPTORS: *Metals, *Slags, Melting, *Spectrographic analysis, *Liquid metals

Maehara, S.
ON THE LINING OF BASIC OXYGEN (LD) FURNACES. Aug 61, 1300 words.
Order from HB $4.40 HB-4943

Trans. of Tetsu to Hagane (Japan) 1959, v. 45, no. 9, p. 957-959.

DESCRIPTORS: *Refractory materials, *Brick, *Blast furnaces, Construction, *Combustion chamber liners.

Makelt, H.
ROD AND TUBE DRAWING ON MODERN DRAWBENCHES. Oct 61.
Order from BISI £4 5s BISI-2408

Trans. of Z[eitschrift für] Metallk[unde] (West Germany) 1961, v. 52[no. 1] p. 69-75.

DESCRIPTORS: *Machines, *Pipes, *Rods.

Matthaei, H.
PRACTICAL EXPERIENCES WITH THE PLANETARY MILL. Oct 61.
Order from BISI £3 15s BISI-2446

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, [28] July, p. 1017-1021.

DESCRIPTORS: *Rolling mills, *Milling machines.

Matting, A. and Deutsch, V.
POSSIBILITIES OF EXACT CRACK-DEPTH MEASUREMENT. Nov 61.
Order from BISI £5 BISI-2428

Trans. of Materialprüfung (West Germany) 1961, v. 3, 20 June, p. 218-224.

DESCRIPTORS: *Fracture (Mechanics), Electrical conductance, Test methods.

Mévis, N.
OPERATING COSTS OF THE INTERNAL TRANSPORT SERVICES OF IRON AND STEEL WORKS. [1961] [13]p.
Order from SLA $1.60 61-18375

Trans. of a paper from International Steelworks Transport Conference [held at] Liege, June 58.

DESCRIPTORS: *Iron industry, *Steel industry, Industrial plants, Operation, Costs, *Transportation.

Mieth, W. H.
RESEARCH ON EFFICIENCY AND COST OF ORE TRANSPORT FROM A NORTH SEA PORT TO A RUHR STEELWORKS. Oct 61.
Order from BISI £6 10s BISI-2275

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Steel industry, Cargo, *Ores, Transportation, Costs.

Nikol'skii, N. A., Kalakutskaya, N. A. and others.
THERMOPHYSICAL PROPERTIES OF CERTAIN METALS AND ALLOYS IN THE MOLTEN STATE. 27 Feb 61 [65]p. (35 figs. omitted) 30 refs. MCL-714/1 AD-261 775.
Order from OTS or SLA $6.60 61-27826

Unedited rough draft trans. of mono. Voprosy Teploobmena [Problems of Heat Exchange, Moscow] 1959, p. 11-45.

DESCRIPTORS: *Liquid metals, High temperature research, Thermal conductivity, Measurement, Determination, Specific heat, Viscosity, Tin, Density, Alkali metal alloys, Bismuth, Sodium, Lithium, Mercury, Potassium, Sodium alloys, Potassium alloys, Bismuth alloys, Lead alloys, USSR, Test equipment, Test methods, Melting, Physical properties, Alkali metals, Alloys, Metals.

Coefficients of thermal conductivity, specific heat, kinematic viscosity, specific gravity have been compiled for mercury, tin, lead, bismuth, lithium, sodium, and potassium in the liquid state.

Morita, S. and Sato, M.
SOME PROBLEMS OF THE MECHANICAL OPERATION OF A BASIC OXYGEN (LD) PLANT. Oct 61, 1300 words.
Order from HB $4.90 HB-5226

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 341-343.

DESCRIPTORS: *Blast furnaces, Operation, Mechanical engineering, Oxygen, *Hoists.

Muller, H. G. and Funke, P.
DETERMINATION OF ROLL FORCE AND TORQUE BY EXPERIMENT AND CALCULATION UNDER THE INFLUENCE OF STRIP TENSION (REEL TENSION AND DRAG TENSION). Oct 61.
Order from BISI £6 15s BISI-2189

Trans. of Stahl [und] Eisen (West Germany) 1958, v. 78, 30 Oct, p. 1564-1574.

DESCRIPTORS: *Rolling mills, *Torque, Mathematical prediction, Equations, *Steel, Processing, Operation, Drag.

Nagel, R. and Ibing, R.
COMPARING DIFFERENT METHODS FOR PNEUMATIC ASH REMOVAL. Sep 61.
Order from BISI £4 BISI-2230

Trans. of Braunkohle, Wärme und Energie (West Germany) 1960, v. 12, Feb, p. 53-59.

DESCRIPTORS: Pneumatic systems, *Sinters, Disposal.

Nickel, E.-G.
SURFACE DEFECTS IN PRECISION CASTING. Oct 61.
Order from BISI £4 10s BISI-2356

Trans. of paper given at the European Conference on Precision Casting, Paris, May 1958, 5p.

DESCRIPTORS: *Castings, Surface properties.

Prasek, L.
THE MATHEMATICAL DETERMINATION OF INTERNAL STRESSES IN INGOTS AND FORGINGS. Oct 61.
Order from BISI £5 BISI-2346

Trans. of Hutn[icke] Listy (Czechoslovakia) 1959, v. 14, no. 6, p. 489-493.

DESCRIPTORS: *Castings, *Forging, Stresses, Determination.

Roques, C. and others.
STUDY OF THE HETEROGENITY OF LARGE FORGING INGOTS. Oct 61.
Order from BISI £7 5s BISI-2373

Trans. of Rev[ue de] Mét[allurgie] (France) 1960, v. 57, Dec, p. 1091-1105.

DESCRIPTORS: Forging, *Castings.

Rub, F.
TREATMENT OF EFFLUENTS IN THE MANUFACTURE AND PROCESSING OF WIRE AND STRIP. Oct 61.
Order from BISI £5 5s BISI-2421

Trans. of Draht (West Germany) 1961, v. 12, no. 6, p. 263-269.

DESCRIPTORS: Industrial plants, *Chemical waste, Disposal, Wire.

Stodt, A.
A NEW TOOL MANIPULATOR FOR LARGE FORGING PRESSES. Oct 61.
Order from BISI £2 BISI-2489

Trans. from mono. (paper) presented at the Conference on Heavy Forging, Terni, Sep 1961.

DESCRIPTORS: *Forge presses, *Machine tools, Metal forming presses, Forging.

Suendorf, C.
STEEL REQUIREMENTS OF THE UNDER-DEVELOPED COUNTRIES. Oct 61.
Order from BISI £2 BISI-2425

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 3 Aug, p. 1093-1094.

DESCRIPTORS: *Steel.

Svenson and Schweer, W.
THE DETERMINATION OF THE OPERATING CONDITIONS OF STEELWORKS CRANES AND CHECKING THE BASIS FOR SELECTING THEIR DIMENSIONS. Oct 61.
Order from BISI £7 5s BISI-1621

Trans. of Stahl und Eisen (West Germany) 1960, v. 80, 21 Jan, p. 79-90.

DESCRIPTORS: Steel industry, *Hoists, Design, *Girders.

Takeiri, T. and others.
ON THE DESIGN OF PRODUCTION-SCALE VACUUM DEGASSING EQUIPMENT. Oct 61, 900 words.
Order from HB $2.00 HB-4925

Trans. of Tetsu to Hagane (Japan) 1959, v. 45, no. 9, p. 961-962.

DESCRIPTORS: *Vacuum apparatus, Design, *Degasification, Steel, Alloys, Casting, Pressure, Hydrogen, Nitrogen, Oxygen, Separation.

Tesche, K.
EQUILIBRIA BETWEEN CARBON AND OXYGEN AND THE METALS CHROMIUM AND MANGANESE AS A FUNCTION OF TEMPERATURE DURING OXYGEN REFINING IN BASIC ARC FURNACES. I. CHROMIUM Nov 61.
Order from BISI £8 BISI-2445

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1961, v. 32, July, p. 437-450.

DESCRIPTORS: *Chemical equilibrium, *Carbon, *Oxygen, Metals, *Chromium, *Manganese, Temperature, Refineries, Electric arcs.

Trömel, Gerhard.
INVESTIGATIONS OF THE TERNARY SYSTEM $CaO-P_2O_5-SiO_2$ AND THEIR IMPORTANCE IN THE PRODUCTION OF BASIC BESSEMER SLAGS. Rept. no. 406 of the [Steelworks Committee] of the Verein Deutscher Eisenhüttenleute. [1961] 16p. 13 refs.
Order from SLA $1.60 61-18475

Trans. of Stahl und Eisen (Germany) 1943, v. 63, 14 Jan, p. 21-30.

DESCRIPTORS: *Slags, Production, Calcium compounds, Phosphates, Silicon compounds, Dioxides, Chemical equilibrium, Iron, Manganese compounds, Oxides, Chemical reactions.

Valyavkin, F. M.
THE FORGING DOWN OF HEAT-RESISTING STEEL INGOTS. Oct 61.
Order from BISI £4 10s BISI-2281

Trans. of Kuznechno-Shtampov[ochnoe Proizvodstvo] (USSR) 1960 [v. 2] no. 7, p. 8-13.

DESCRIPTORS: *Steel castings, *Stainless steel, Heat resistant alloys, Forging, Deformation, *Castings.

Zlatnikova, J. and Zlatnik, I.
RAPID HEATING DURING HEAT TREATMENT OF LARGE FORGINGS. Oct 61.
Order from BISI £4 BISI-2285

Trans. of Hutnik (Czechoslovakia) 1960, v. 10, no. 8, p. 311-314.

DESCRIPTORS: *Castings, *Heat treatment, *Steel castings, Steel, Iron alloys, Temperature, Forging.

Ferrous Metals

Akazawa, Y. and Mori, T.
INSPECTION OF STEEL TUBING BY EDDY CURRENT METHODS. Oct 61, 1150 words.
Order from HB $4.25 HB-5273

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 3, p. 414-416.

DESCRIPTORS: *Steel tubing, Electric currents, Pipes

Aketa, Y., Sasakin, K., and Ushijima, K.
PRIMARY COOLING IN THE CONTINUOUS CASTING (OF STEEL), REPT. I. Sep 61, 2100 words.
Order from HB $4.75 HB-5223

Trans. of Tetsu to Hagane (Japan) 1959, v. 45, no. 12, p. 1341-1345.

DESCRIPTORS: *Steel, *Steel castings, *Fracture (Mechanics), *Castings, Cooling.

Aketa, Y. and Ushijima, K.
SECONDARY COOLING IN THE CONTINUOUS CASTING (OF STEEL), REPT. II. Sep 61, 2000 words.
Order from HB $4.50 HB-5219

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 7, p. 753-757.

DESCRIPTORS: *Steel, *Steel castings, Cooling, Castings, Magnesium alloys, Sulphur, *Fracture (Mechanics)

Akutagawa, T. and Okura, A.
FUNDAMENTAL STUDY OF THE FLUID-BED REDUCTION OF IRON ORES. Oct 61, 1000 words.
Order from HB $2.75 HB-5286

Trans. of Tetsu to Hagane (Japan) 1959, v. 45, no. 9, p. 895-897.

DESCRIPTORS: *Iron, *Ores, *Fluidized solids, Magnetite, Reduction.

Al'ftan, E. A.
MECHANICAL PROPERTIES OF STEEL IMPROVED BY COMBINED HEAT AND ULTRASONIC TREATMENT. Aug 61, 1800 words.
Order from HB $5.90 HB-5068

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1960, no. 9, p. 160-166.

DESCRIPTORS: *Steel, Mechanical properties, *Heat treatment, *Ultrasonics, Fracture (Mechanics)

Benes, F. and Tlusta, D.
ARSENIC AND PHOSPHORUS IN HIGH ALLOY Cr-Ni STEELS. Oct 61.
Order from BISI £8 10s BISI-2301

Trans. of Hutn[icke] Listy (Czechoslovakia) 1960, v. 15, no. 12, p. 929-936.

DESCRIPTORS: *Steel, *Chromium alloys, Iron alloys, *Nickel alloys, Phosphorus alloys, Arsenic, Austenite, Heat resistant alloys, Stainless steel, Deterioration, Corrosion.

Boutonnet, P., Richard, A. and others.
BASIC BESSEMER STEEL BLOWN WITH A MIXTURE OF OXYGEN AND CARBON DIOXIDE, PT. 1. [1961] [16]p.
Order from SLA $1.60 61-18398

Trans. of [Revue de Métallurgie (France) 1956, v. 53, p. 575-583].

DESCRIPTORS: *Steel, Production, Mechanical properties, Chemical analysis, *Oxygen, *Carbon dioxide, Metallurgy, Tests.

See also 61-18396

Boutonnet, P., Richard, A. and others.
BASIC BESSEMER STEEL BLOWN WITH OXYGEN-CARBON DIOXIDE MIXTURE (CONCLUSION). III. RESULTS OF TESTS ON AN INDUSTRIAL SCALE. [1961] [29]p. (10 tables 66 figs. omitted) 2 refs.
Order from SLA $2.60 61-18396

Trans. of Rev[ue de] Métall[urgie] (France) 1956, v. 53, no. 9, p. 665-681.

DESCRIPTORS: *Steel, Production, Mechanical properties, Chemical analysis, *Oxygen, *Carbon dioxide, Metallurgy, Tests, Industrial research

See also 61-18626

Chigal, V. and Ezhek, Ya.
THE STRUCTURE AND DISTRIBUTION OF SECONDARY PHASES IN STAINLESS AUSTENITIC STEELS. [1961] [5]p. (9 figs. omitted) 8 refs. C. E. Trans. 1940; [DSIR LLU] M. 4010.
Order from OTS or SLA $1.10 61-28183

Trans. of #Met[allovedenie i Termicheskaya] Ob[rabotka] Metallov (USSR) 1960, no. 8, p. 17-19.

DESCRIPTORS: *Austenite, *Stainless steel, Steel, Phase studies, Chromium compounds, Carbides.

X-ray and electronic structure analysis showed that chromium carbides are separated first in the form of two-dimensional dendrites which grow to definite critical dimensions and then change to more stable and crystallographically more perfect forms. The separation of the thermodynamically more stable titanium carbide occurs at much higher temperatures due to the slower rate of diffusion of titanium. Titanium carbides and chromium carbides have different characteristics

and the TiC in the structure of the titanium-stabilised steels are very dispersed steel particles which can only be seen with the aid of electron microscopes.

Crasemann, H. J.
CUTTING STEEL PLATES AND STRIP WITH ROTARY SHEARS. Nov 61.
Order from BISI £6 10s BISI-2171

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1960, v. 31, Aug, p. 459-470.

DESCRIPTORS: *Cutting tools, *Steel, Milling machines *Sheets, *Metal plates, Manufacturing methods, Tool steel, Machine tools.

Dickens, P., Piper, E. and others.
OPERATIONAL EXPERIENCE WITH A NEW VACUUM SPECTROMETER [AND] OPERATING DIFFICULTIES WITH A VACUUM SPECTROMETER (WITH DISCUSSION). Oct 61.
Order from BISI £5 BISI-2469

Trans. of Arch[iv für das] Eisenh[üttenwesen] (West Germany) 1961, v. 32, June, p. 369-373 and 376-377.

DESCRIPTORS: *Steel industry, *Vacuum apparatus, *Spectrophotometers.

Feroci, A.
CRITERIA FOR THE USE OF STEELS IN HIGH-PRESSURE HIGH-TEMPERATURE PLANTS (TUBES): VALUES PERMISSIBLE FOR CALCULATIONS; SAFETY CRITERIA; MATERIALS MOST WIDELY USED. Nov 61.
Order from BISI £2 10s BISI-2358

Trans. of Met[allurgia] Ital[iana] 1960, v. 52, Oct, p. 661-668.

DESCRIPTORS: *Steel, Steel tubing, High pressure research, High temperature research, Industrial plants, Safety, Pipes, Thermal stresses.

Fischer, F. and others.
THE EFFECT OF THE MICROSURFACE ON THE BEHAVIOUR OF SHEET IN DEEP DRAWING. Nov 61.
Order from BISI £6 BISI-2456

Trans. of Stahl [und] Eisen (West Germany) 1960, v. 80, 27 Oct, p. 1524-1531.

DESCRIPTORS: *Sheets, Microstructure, Deformation, Dies, Steel industry.

Horstmann, D.
INTER-RELATION BETWEEN THE CARBON CONTENT OF STEEL SHEETS, THE ENAMEL AND THE FIRING TEMPERATURE DURING THE PROCESS OF VITREOUS ENAMELLING. Sep 61.
Order from BISI £6 15s BISI-2306

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 11 May, p. 629-640.

DESCRIPTORS: Carbon alloys, *Steel, Sheets, *Enamel coatings, Refractory coatings, Temperature.

Kawabata, M. and others.
EFFECT OF TITANIUM AND ZIRCONIUM UPON HOT SHORTNESS OF LOW-MANGANESE STAINLESS STEELS FOR NUCLEAR REACTORS. Oct 61, 1200 words.
Order from HB $3.90 HB-5257

Trans. of Tetsu to Hagane (Japan) 1960, v. 46, no. 3, p. 358-361.

DESCRIPTORS: *Steel, Austenite, *Titanium, *Zirconium, *Manganese, *Reactor cores, Materials, Temperature, Fracture (Mechanics), Heat treatment, Melting.

Koerfer, Egon, Schenck, Hermann, and Goerlich, Hans-Kurt.
THE EFFECT OF THE HEAT TREATMENT ON THE MACHINABILITY BY TURNING AND DRILLING OF PLAIN CARBON STEEL CONTAINING ABOUT 0.45% WITH SPECIAL REGARD TO THE STEEL MELTING METHOD USED. [1961] [20]p.
Order from SLA $1.10 61-18385

Trans. of Stahl und Eisen (West Germany) 1956 [v. 76] no. 3, p. 125-133.

DESCRIPTORS: *Steel, Heat treatment, Machining, Melting, Tables, Drilling machines.

Long duration turning tests with hard alloy cutting tools of quality S 3, carried out with samples of open hearth, electric, improved converter converter, and basic Bessemer steel in various conditions of heat treatment show that, as a rule, improved converter steel exhibits the best, basic Bessemer steel the worst behaviour. Between these two extremes, electric steel would occupy, from the machinability in turning point of view, the second, and open hearth steel the third position. High service life values were usually observed with material as rolled, and with soft annealed, normalized, and, in some cases also with isothermically treated material, which the other types of heat treatment resulted in low service life values. Accordingly, pearlitic ferritic structures with granular cementite appear to be favourable, sorbitic troostitic structures unfavourable for the machinability in turning of plain carbon steels with abt 0.45% C. Drilling tests with high speed 12 mm drills ABC III, carried out with the same materials showed, that their behaviour in the soft annealed state is not so good in drilling as in turning, and that, contrary to the results obtained in the turning tests, there is no noticeable difference between open hearth, electric, and basic Bessemer steel. Improved converter steel is more easily drillable than the other kinds of steel. (Author)

Kolorz, A.
TREATMENT OF LIQUID CAST IRON WITH ULTRASONIC VIBRATIONS. Oct 61, 2400 words.
Order from HB $6.90 HB-5341

Trans. of Giesserei (West Germany) 1960, v. 47, no. 17, p. 447-451.

DESCRIPTORS: *Cast iron, *Liquid metals, Casting, *Ultrasonics, Steel, *Vibration, Eutectics.

Kopineck, H. -J. and Schmitt, P.
USES OF X-RAY FLUORESCENCE SPECTROANALYSIS IN THE IRON AND STEEL INDUSTRY. Oct 61, 7900 words.
Order from HB $18.60 HB-5362

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1961, v. 32, no. 1, p. 19-28.
Another trans. is available from BISI £7 as BISI-2133 [1961].

DESCRIPTORS: *Iron industry, *Steel industry, *X-ray spectroscopy, Spectrographic analysis, *Fluorescence, *Steel.

Kruglikov, S. S.
STRUCTURE AND PROPERTIES OF STEEL. ABSTRACT 61: A STUDY OF THE FATIGUE OF TOOL STEELS HAVING A SURFACE COATING.
17 Jan 61 [6]p. MCL-790/1; AD-257 166.
Order from OTS or SLA $1.10 61-27405

Unedited rough draft trans. of [Akademiya Nauk SSSR. Institut Nauchnoi Informatsii]. Ekspress-Informatsiya. Seriya Metallovedenie i Termoobrabotka, 1960, no. 10, abstract 61, 4p.

DESCRIPTORS: *Steel, *Fatigue (Mechanics), *Coatings, Metal coatings, USSR, Nickel plating, Aluminum coatings, Zinc coatings, Paints, Heat treatment, Nickel alloys, Zinc alloys, *Tool steel, Mechanical properties.

CONCLUSIONS: The fatigue strength of chrome tool steel is substantially reduced as a result of applying a metallic coating by spraying, dipping, or electrolysis. The decrease occurs before and after holding the steel at an elevated temperature. Shot-peening or nitriding the surface of steel prior to application of a coating considerably increases the fatigue strength of the coated specimens. This effect also occurs after holding the coated specimens at elevated temperatures. Aluminum-silicon paint does not substantially effect the fatigue of steel. (Author)

Liberman, L. Ya. and Sokolova, M. N.
HEAT-RESISTANT STEEL AS A BOLTING MATERIAL FOR STEAM POWER INSTALLATIONS. Sep 61.
Order from BISI £3 15s BISI-2451

Trans. of Teploenergetika (USSR) 1961, v. 8 [no. 5] p. 28-34.
Another trans. is available from FT $14.25 as FT-606 [1961] 14p.

DESCRIPTORS: *Heat resistant alloys, *Steel, Steam pipes, *Steam power plants, *Steel tubing, *Bolts.

Lückerath, W.
SUSCEPTIBILITY TO CRACKING OF CONCRETE REINFORCING STEEL ROUNDS WITH CROSS RIBS.
Nov 61.
Order from BISI £4 5s BISI-2486

Trans. of Stahl [und] Eisen (West Germany) 1957, v. 77 [no. 1] p. 11-15.

DESCRIPTORS: *Fracture (Mechanics), Concrete, *Reinforcing steel, Rods.

Molinder, G.
ISOTHERMAL TRANSFORMATION DIAGRAMS FOR FOUR SWEDISH STANDARDIZED SPRING STEELS. [1960].
Order from BISI £2 5s BISI-1602

Trans. of Jernkont[orets] Tekn[ista] Rad (Sweden) 1958, no. 248, p. 155-164.

DESCRIPTORS: Sweden, *Steel, Transformations, Phase studies, *Helixes, *Springs, Heat treatment.

Molinder, G.
ISOTHERMAL TRANSFORMATION DIAGRAMS FOR SOME SWEDISH STANDARDIZED TEMPERING STEELS. [1960].
Order from BISI £4 5s BISI-1603

Trans. of Jernkont[orets] Tekn[ista] Råd (Sweden) 1959, no. 255, p. 405-430.

DESCRIPTORS: Sweden, *Steel, Transformations.

Pavlov, I. M. and Kuprin, M. I.
INVESTIGATION OF FRICTION IN THE HOT ROLLING OF STEEL. Sep 61.
Order from BISI £10 BISI-2050

Trans. of Institut Stali, Moscow. Sbornik (USSR) 1955, v. 33, p. 154-192.

DESCRIPTORS: *Steel, *Friction, Heat treatment.

Peiter, A. and Altmeyer, G.
TENSILE TESTS AT +20 TO -180° C ON DUCTILE AND EMBRITTLED SPECIMENS OF CHROMIUM-NICKEL STEEL. Oct 61.
Order from BISI £3 10s BISI-2366

Trans. of Arch[iv für das] Eisenhüttenwesen (West Germany) 1960, v. 31, July, p. 427-432.

DESCRIPTORS: *Steel, Chromium alloys, Nickel alloys, Tensile properties, Tests, Temperature, Alloys.

Schmidtmann, E. and others.
INFLUENCE OF CARBON CONTENT AND EXPERIMENTAL TEMPERATURE ON THE WORK HARDENING AND SPECIFIC ELECTRICAL RESISTANCE OF FERRITIC AND AUSTENITIC STEELS DURING COLD DEFORMATION. Sep 61.
Order from BISI £ 7 BISI-2335

Trans. of Arch[iv fur das] Eisenhut[tenwesen] (West Germany) 1960, v. 31, May, p. 299-308.

DESCRIPTORS: *Steel, *Austenite, Deformation, Pearlite, Grains (Metallurgy), Boundary layer, Electrical properties, Hardening, Temperature.

Sokolkov, E. N., Lozinskii, M. G., and Antipova, E. I.
THE STRUCTURE OF THE GRAIN BOUNDARIES AND THE HEAT RESISTANCE OF AUSTENITIC STEEL. [1961] [10]p. 9 refs. C. E. Trans. 1702; [DSIR LLU] M. 2947.
Order from OTS or SLA $1.10 61-23383

Trans. of Met[allovedenie] [i Termicheskaya] Ob[rabotka] Metallov (USSR) 1958, no. 11, p. 19-25.

DESCRIPTORS: *Steel, Grains (Metallurgy), Microstructure, Temperature, Deformation, Plastic flow, *Austenite.

A change in the structural state of the austenitic grain boundaries, consisting in their marked distortion by preliminary plastic deformation under conditions that exclude the development of recrystallization, brought about an increase in heat resistance. The decrease in creep rate is connected with the retardation of plastic deformation along the austenitic grain boundaries. Strengthening of the alloy is also determined by a change in the fine structure of the whole body of the grain.

Zimmermann, E.
OCCURRENCE OF ALUMINUM NITRIDE IN FULLY KILLED BASIC BESSEMER STEEL. Oct 61, 5800 words.
Order from HB $15.75 HB-5034

Trans. of Archiv [für das] Eisenh[üttenwesen] (West Germany) 1960, v. 31, no. 10, p. 587-594.

DESCRIPTORS: *Aluminum compounds, *Nitrides, Chemical analysis, Nitration, *Steel, Manufacturing methods, Rolling mills, Castings, Mechanical properties, Fluidized solids.

Structural Metallurgy and Corrosion

FATIGUE OF METALS: SELECTED ARTICLES (Ustalost Metallov). 21 Aug 61 [85]p. (28 figs. 10 tables omitted) 23 refs. MCL-1054/1. AD-264 628
Order from OTS or SLA $8.10 61-28813

Unedited rough draft trans. of mono. Materialy Soveshchaniya po Ustalosti Metallov, 22-24 Sep 58, Moscow, 1960, p. 34-46 and 62-79.

DESCRIPTORS: *Fatigue (Mechanics), *Metals, *Fracture (Mechanics), Tensile properties, Steel, Sensitivity, Stresses.

Contents:
Strength at repeated loadings and resistance to fracture, by S. N. Ratner
Concerning sensitivity of high strength steels to notching, by M. P. Markovets
Concerning notch sensitivity of high strength steels, by S. E. Belyaev.

Bokshteyn, B. S. and Gubkova, T. I.
EVALUATION OF THE FACTORS DETERMINING THE CHANGE IN DIFFUSION MOBILITY DURING DEFORMATION. 22 Sep 60, 12p. 9 refs. JPRS: 3927.
Order from OTS $0.50 60-31777

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy. Chernaya Metallurgiya (USSR) 1960, no. 5, p. 108-114.

DESCRIPTORS: Metals, *Diffusion, *Deformation, Mathematical analysis, Grains (Metallurgy), *Tin, *Nickel, Autoradiography.

On the basis of previous experimental data (Akad. Nauk Doklady 121: 1015, 1958; available in translation from LC or SLA as 59-10792) a quantative analysis is made of the role of the change in dimensions and the change in the mobility of the blocks.

Brainin, I. E. and Gubenko, N. V.
THE EFFECT OF STEEL QUALITY OF THE MANNER OF INTRODUCING ALUMINIUM. Sep 61.
Order from BISI £4 15s BISI-2207

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Met[allurgiya] (USSR) 1959 [no. 10] p. 89-98.

DESCRIPTORS: *Steel, Quality control, *Aluminum.

Dahl, W. and others.
ELECTRON MICROSCOPE EXAMINATION OF ALUMINUM NITRIDE IN STRUCTURAL STEELS MELTED ON A PRODUCTION SCALE. Nov 61.
Order from BISI £2 10s BISI-2427

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1961, v. 32, July, p. 475-482.

DESCRIPTORS: *Electron microscopes, Microanalysis, *Aluminum compounds, *Nitrides, Microstructure, *Steel, Melting, Production.

Gohr, H. and Lange, E.
ELECTRODES HAVING A CORROSION-PROTECTIVE LAYER. [1961] 22p.
Order from ATS $30.80 ATS-41N49G

Trans. of Electrochim[ica] Acta (U. S.) 1960, v. 2, p. 287-310.

DESCRIPTORS: *Electrodes, Corrosion inhibition, Coatings.

Kalinnikov, E. S. and Zavaluev, I. P.
ON THE HYDROGEN PROBLEM IN ALLOY STEELS FROM THE ELECTRIC FURNACE. Aug 61, 3100 words.
Order from HB $8.75 HB-5149

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1961, no. 2, p. 45-50.

DESCRIPTORS: *Steel, Metallurgical analysis, *Electric furnaces, *Hydrogen, Alloys.

Klinov, I. Ya.
ACTION OF MINERAL ACIDS ON METALS AND ALLOYS. [1961] 9p.
Order from OTS or SLA $1.10 61-18340

Trans. of mono. Konferentsiya po Korrozii Metallov (no. 2) (Conference on Corrosion of Metals (no. 2). Trudy, v. 2, Moscow/Leningrad, 1943, p. 216-226.

DESCRIPTORS: *Iron alloys, Alloys, *Metals, Acids, *Steel, Minerals, *Corrosion inhibition, *Sulfuric acid, *Hydrochloric acid, *Nitric acid, Bronze, Chromium, Nickel, Silicon, Corrosion.

The resistance to corrosion was tested of 38 ferrous and non-ferrous alloys in sulfuric acid, hydrochloric acid and nitric acid of varying concentrations at different temperatures, in some cases also under pressures of up to 17 atm. The samples represent for the most part metals industrially produced in the U. S. S. R. and their chemical composition is reported. In sulfuric acid of up to 10% concentration steels containing 17-18% chromium and 8% nickel can be used at up to 60°, while at room temperature bronzes and copper are stable to 0.5-40% sulfuric acid. Under 15 atm pressure only silicon cast iron resists corrosion by 0.5-80% acid at up to 200°. In hydrochloric acid of up to 18% concentration only the silicon steel Antichlor is suitable for use. Nitric acid of all concentrations, including fuming acid, does not attack chrome-nickel steels at temperatures up to 70°. (Author)

Kroneis, M. and Gattringer, R.
NON-MAGNETIC STEELS FOR HIGH APPLIED MECHANICAL STRESSES. Oct 61.
Order from BISI £7 15s BISI-2182

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 30 Mar., p. 431-445.

DESCRIPTORS: *Austenite, *Steel, Fatigue (Mechanics), Stresses, Impact shock, Manganese, Chromium, Vanadium, Nickel.

Legat, A. and others.
A CONTRIBUTION TO THE QUESTION OF GRAIN SIZE BEHAVIOUR IN STEEL. Oct 61.
Order from BISI £3 BISI-2415

Trans. of Radex-Rund[schau] (Austria) 1961, Aug, p. 657-663.

DESCRIPTORS: *Steel, *Grains (Metallurgy).

Levin, L. A., ed.
INTERCRYSTALLINE CORROSION AND CORROSION OF METALS UNDER STRESS. Nov 61, approx. 350p.
Order from CB $18.00

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Metals, *Corrosion, Crystal structure, *Steel, Stainless steel, Stresses, Alloys, Manganese alloys, Aluminum alloys, Sulfur, Intermetallic compounds.

Stich, W.
ELECTRICAL RESISTANCE HEATING FOR THE TREATMENT OF STEEL. Sep 61.
Order from BISI £5 15s BISI-1925

Trans. of Congres International d'Electrothermie (no. 4) [held at] Stresa, 25-29 May 59. [Proceedings] v. 2, sect IV, paper N. 406.

DESCRIPTORS: *Steel, Processing, Heat treatment, Steel castings.

Zilova, T. K. and others.
METHOD FOR ASSESSING THE TENDENCY OF METALS TO DELAYED FRACTURE. Nov 61.
Order from BISI £3 10s BISI-2431

Trans. of Zavods[kaya] Lab[oratoriya] (USSR) 1956 [v. 22] no. 8, p. 967-972.

DESCRIPTORS: *Fracture (Mechanics), Deformation, *Steel, Stresses, Rupture.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Busulini, L.
PRELIMINARY OBSERVATIONS ON A PARTICULAR EFFECT OF NUCLEAR RADIATIONS ON ELECTRODE PROCESSES. [1961] 2p.
Order from ATS $3.60 ATS-73N54I

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe [di] Sci[enze] Fi[ziche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1961 [ser. 8] v. 30, p. 53-54.

DESCRIPTORS: *Radiation effects, *Electrodes, Nuclear reactions.

Demirkhanov, R. A., Gutkin, T. L, and Dorokhov, V. V.
MASSES ISOTOPIQUES ET ÉNERGIE DE LIAISON DE NOYAUX A NOMBRE ATOMIQUE COMPRIS ENTRE 186 ET 196 (Massy Izotopov i Energii Svyazi Yader v Diapazone Znachenii Mass ot 186 do 196) tr.by B. Vinogradoff. 27 June 61 [22]p. (Russian text included) 10 refs. CEA Trans. no. R 1371 (text in French).
Order from OTS or SLA $2.60 61-28682

Trans. in French of #Zh[urnal] Eksper[imental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1959, v. 37, no. 5, p. 1218-1224.

DESCRIPTORS: *Osmium, *Iridium, *Platinum, *Gold, *Mercury, Radioactive isotopes, Isotopes, Mass spectroscopy, *Nuclei, Energy.

Kolbanovskii, Yu. A.
PROBLEMS OF THE KINETICS AND MECHANISM OF RADIATION-CHEMICAL REACTIONS (ALL-UNION CONFERENCE ON RADIATION CHEMISTRY (NO. 2)). 22 Sep 61 [15]p. JPRS: 10242.
Order from OTS or SLA $1.60 61-28576

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 1, p. 154-159.

DESCRIPTORS: Reaction kinetics, *Radiochemistry, Conferences, *Chemical reactions, *Radiation effects.

Speakers and their topics are given for the Conference that was held in Moscow on October 10 to 14, 1960. In a few cases brief summaries of the papers are also given.

Kondratov, P. I. and Gel'man, A. D.
COMPOSÉS DU NEPTUNIUM TÉTRAVALENT AVEC L'AXIDE OXALIQUE (Oksalatnye Soedineniya Chetyrekhvalentnogo Neptuniya) [Oxalate Compounds of Np(IV)] tr. by Mme. Boutleroff. 6 June 61 [13]p. 9 refs. CEA Trans. no. R 1375 (text in French).
Order from OTS or SLA $1.60 61-28680

Trans. in French of Radiokhimiya (USSR) 1960 [v. 2] no. 3, p. 315-319.

DESCRIPTORS: *Neptunium, *Oxalates, Complex compounds, Solubility, Determination.

Elementary Particles

Kolomenskii, A.
PERTES D'ÉNERGIE D'UNE PARTICULE CHARGÉE SE DÉPLACANT DANS UN MILIEU ANISOTROPE [Energy Loss of a Charge Particle Moving in an Anisotropic Medium] tr. by Melnick. 6 June 61 [7]p. (18 illus. omitted) 6 refs. CEA Trans. no. R 1323 (text in French).
Order from OTS or SLA $1.10 61-28676

Trans. in French of Akad[emiya] Nauk SSSR. Dokl[ady] 1952, v. 86, no. 6, p. 1097-1099.
A trans. in English is available from LC or SLA mi$1.80, ph$1.80 as 59-20485, Aug 59, 6p.

DESCRIPTORS: *Particles, Motion, Energy, Ionization, Polarization, Cerenkov radiation.

For abstract see Technical Translations 3: 121, 1960.

Nelipa, N. F.
PHOTOPRODUCTION AND SCATTERING OF π-MESONS. 1961, 100p.
Order from GB $5.00

Trans. of mono. [Svyaz' Foto-Obrazovaniya π-Mezonov s Rasseyaniem, Moscow, 1960, 87p.].

DESCRIPTORS: *Mesons, *Meson scattering, *Pions, Production, Nucleons

Isotope Separation

Faltings, V. and Seehoffer, S.
A MULTIPLICATION EFFECT IN THE ENRICHMENT OF GERMANIUM ISOTOPES IN THE GAS CENTRIFUGE. [1961] [11]p. 3 refs.
Order from SLA $1.60 61-18294

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1953, v. 57, p. 445-448.

DESCRIPTORS: *Germanium, *Isotopes, Isotope separation, *Centrifuges, Operation, Multiplication factor.

In the enrichment of selenium isotopes in the gas ultracentrifuge it was found that the maximum theoretical enrichment factors were occasionally exceeded. A more detailed study of these effects during the enrichment of germanium isotopes resulted in a reproducible increase of the enrichment up to twice the expected value. (Author)

Hertz, H. G. and Nann, E.
ON THE DEPENDENCE OF THE SEPARATION EFFORT ON THE COUNTERCURRENT CIRCULATION IN THE GAS CENTRIFUGE. [7]p. 6 refs.
Order from SLA $1.10 61-18293

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1955, v. 10a, Jan, p. 170-171.

DESCRIPTORS: *Centrifuges, Centrifuge separation, *Isotope separation.

Martin, H.
GAS CONVECTION IN ULTRACENTRIFUGES AND ITS SIGNIFICANCE IN THE DEVELOPMENT OF GAS CENTRIFUGATION. [1961] [26]p. (2 figs. omitted) 29 refs.
Order from SLA $2.60 61-18289

Trans. of Chemie-Ingenieur-Technik (West Germany) 1959, v. 31, p. 73-79.

DESCRIPTORS: *Centrifuges, *Ultracentrifuges, Gases, Convection, Rotors, Design, Tests, Uranium, Isotopes, *Isotope separation.

The properties of radial, axial and turbulent convection in gas centrifuge rotors are reviewed and it is shown how the methods of gas centrifugation have been influenced in time by the increasing understanding of these kinds of flow. A report is given for the first time on a forerunner of the present countercurrent centrifuge and on the results and course of the study of the Institute for Physical Chemistry at the University of Kiel in the field of gas centrifugation. (Author)

Nuclear Engineering and Power

Nosov, V. I.
EFFICIENCY OF A SYSTEM OF ABSORBING RODS IN A REACTOR WITH A REFLECTOR (Effektivnost' Sistemy Pogloshchayushchikh Sterzhnei v Reaktore s Otrazhatelem). 27 July 61 [17]p. 8 refs. AD-261 797. MCL-968/1+2.
Order from OTS or SLA $1.60 61-27846

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1960, v. 9, no. 4, p. 262-269.

DESCRIPTORS: *Thermal neutrons, *Homogenous reactors, *Reflectors, *Reactor cores, *Rods, *Neutron flux density, Neutrons.

The criticality and distribution conditions of neutron fluxes for a homogeneous thermal-neutron reactor with a system of absorbing rods are obtained in a two-group approximation. The rods are submerged into the full depth of the reactor and are located at an equal distance from each other in a circle in the core or radial reflector. The results of the calculations are given.

Voronin, I. M., Dmitriev, V. D. and others.
MECHANICAL PROPERTIES AND MICROSTRUCTURE OF SOME STRUCTURAL MATERIALS AFTER IRRADIATION BY NEUTRONS, tr. by J. Woroncow. 31 Oct 60, 8p. 6 refs. XDC 60-10-157.
Order from OTS or SLA $1.10 AEC-tr-4328

Trans. of #Atomnaya Energiya (USSR) 1960, v. 8 [no. 6] p. 514-518.

DESCRIPTORS: Mechanical properties, Microstructure, *Radiation effects, Neutrons, *Plasticity, Austenite, Martensite, *Steel, *Molybdenum, *Ferrites.

This article describes irradiation effects under reactor operating conditions of the first atomic power station on mechanical properties and microstructure of a series of austenitic, ferritic, ferrite-martensitic steels and molybdenum. Sudden drop of plasticity is shown in austenitic steels, ferritic steels, and molybdenum as a result of irradiation of an integral flux of $(0.9 - 3.4) \times 10^{20}$ nvt at 450 - 650° C. It was revealed that the embrittleness of steels and molybdenum differ in nature from each other. This information can be helpful in design of new atomic power stations. (Author)

PHYSICS

Ginzburg, V. L.
PROPAGATION OF ELECTROMAGNETIC WAVES IN PLASMA. 1961, approx. 900p.
Order from GB $38.00

Trans. of [Rasprostranenie Elektromagnitnykh Voln v Plazme, Moscow, 1960, 552p.].

DESCRIPTORS: *Plasma physics, *Electromagnetic waves, Propagation, *Radio waves, Reflection, Electromagnetic fields, Textbooks, USSR

Zadoyan, M. A.
THE SPREADING OF THE PLASTIC ZONE IN AN INHOMOGENEOUS TUBE UNDER THE DYNAMIC INFLUENCE OF PRESSURE. 7 Aug 61 [10]p. 2 refs. MCL-1114/1+2. AD-262 608
Order from OTS or SLA $1.10 61-28245

Unedited rough draft trans. of Akademiya Nauk Armanskoi SSR [Erevan]. Izvestiya. Fiziko-Matematicheskikh Nauk, 1960, v. 13, no. 3, p. 89-95.

DESCRIPTORS: *Cylindrical bodies, *Plasticity, Deformation, Pressure, Load distribution.

Zaidel', A. N., Petrov, A. A., and Veinberg, G. V.
SPECTRAL-ISOTOPIC METHOD IN THE DETERMINATION OF HYDROGEN IN METALS, tr. by A. Behr. 1961. DSIR LLU E. 20582.
Pub. by Butterworths Scientific Publications, London, Eng. 30s.

Trans. of mono. [Spektral'no Izotopnyi Metod Opredeleniya Vodoroda v Metallakh', Leningrad, 1957].

DESCRIPTORS: Metals, *Hydrogen, Determination, *Spectrographic analysis.

Acoustics

Fischer, F. A.
FUNDAMENTALS OF ELECTROACOUSTICS, tr. by S. Ehrlich and F. Pordes. [1961] 186p.
Order from Dover Publications, Inc., 180 Varick St., New York, 14, N. Y. $2.25

Trans. of unidentified mono., n. p. n. d.

DESCRIPTORS: *Acoustics, Electronics.

Tverskoi, N. P.
THE EFFECT OF SOUND FREQUENCY AND INTENSITY OF WATER FOG DISSIPATION RATE. [1961] 9p.
Order from ATS $12.50 ATS-46N52R
Trans. of Glavnaya Geofiz[icheskaya] Observatoriya [Leningrad]. Trudy (USSR) 1960, no. 104[166] p. 85-94.
DESCRIPTORS: *Water, *Fog, Scattering, Acoustics, *Sound, Frequency, Intensity.

Electricity and Magnetism

Smol'kov, N. A. and Dai, Do-shen.
CERTAIN PROPERTIES OF YTTRIUM AND GADOLINIUM FERRITE GARNETS (Nekotorye Svoistva Ittrievogo i Gadolinievogo Ferritov-Granatov). 21 July 61, 5p. (8 figs. omitted) 23 refs. H-9298; JPRS (R-1766-D).
Order from OTS $0.50 61-31639

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1959, no. 6, p. 145-151.
Another trans. is available from MDF $4.50 as MDF S-166 [1960] 8p.

DESCRIPTORS: *Yttrium, Magnetic properties, *Gadolinium, *Magnetic materials, *Ferrites, *Garnet.

Results are presented of a study of the static magnetic characteristics and high-frequency properties of yttrium and gadolinium ferrite garnets as a function of the temperature. Components of the permeability tensor, the effective permeability and the complex permittivity on a 9,370 mc frequency were determined. (Author)

Vajda, Gy.
ABSORPTION IN MULTI-LAYER INSULATIONS. [1961] 9p.
Order from STT $7.00 STT-188-466

Trans. from Acta Technica (Hungary) 1960, v. 31, no. 3/4.

DESCRIPTORS: *Electric insulation, Absorption.

Optics

Brauer, Elfriede, and Brauer, Peter.
CONCERNING LUMINOUS TRANSITIONS WITHIN THE GROUND STATE MULTIPLET OF THE TRIVALENT IONS OF THE RARE EARTHS. [1961] [3]p. 5 refs.
Order from SLA $1.10 61-20007

Trans. of die Naturwissenschaften (West Germany) [1947] v. 34, p. 120-121.

DESCRIPTORS: *Rare earths, *Ions, Luminescence, *Phosphors, Excitation, Infrared spectroscopy.

Claret, Rene.
APPARATUS FOR THE DETECTION OF SMALL ANGULAR DISPLACEMENTS. [1961] 16p.
Order from SLA $1.60 61-18762

Trans. from mono. Colloquia of the International Commission for Optics: Optics in Meteorology, n.p., 6-9 May 58.
DESCRIPTORS: *Polariscopes, Optical instruments, Design, Meteorology.
A lecture.

Groth, R.
ON INFRARED DETECTORS BASED ON PHOSPHORS. [1961] 9p. 5 refs.
Order from SLA $1.10 61-20826

Trans. of Zeitschrift für Naturforschung (West Germany) 1961, v. 16a, no. 2, p. 169-172.

DESCRIPTORS: *Infrared detectors, Design, *Infrared phosphors, Excitation, Detectors, Phosphors.

An infrared detector is proposed which is based on the stimulation of infrared-sensitive phosphors. The principle of such a detector is explained and experimental results are described which were obtained with an SrS-Ce-Sm phosphor, by means of which a sensitivity of 6×10^{-11} watt was obtained for wave lengths of the order of 1μ. (Author)

Kralova, Marie.
THERMIC MICROSCOPE, PRODUCED BY VACUTHERM, IN CONJUNCTION WITH A VACUUM DELIVERY PUMP OF CZECHOSLOVAK MANUFACTURE. [1961] 9p.
Order from STT $7.00 STT-176-650

Trans. of Slevarenstvi (Czechoslovakia) 1960, v. 9, no. 4, p. 143-145.

DESCRIPTORS: *Microscopes, Czechoslovakia, Manufacturing methods.

Solid State Physics

Debray, L. and Hardy, A.
CONTRIBUTION TO THE STRUCTURAL STUDY OF THE LITHIUM ALUMINATES. 20 June 61, 2p. (1 fig. omitted) 3 refs.
Order from SLA $1.10 61-18700

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1960, v. 251, p. 725-726 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Lithium, *Aluminates, Chemical analysis, X-ray diffraction analysis, Crystal structure.

A study of the Al_2O_3-Li_2O system reveals two aluminates: $LiAlO_2$ and $LiAl_5O_8$. $LiAlO_2$ belongs to space group O^8 (a = 12.650Å). $LiAl_5O_8$ belongs to the spinel group (a = 7.90Å), and its cations are distributed randomly. (Author)

Keldys, L. V., Vavilov, V. S., and Bricin, K. I.
THE INFLUENCE OF A STRONG ELECTRIC FIELD ON THE OPTICAL PROPERTIES OF SEMICONDUCTORS. [1961] 5p.
Order from ATS $7.60 ATS-75N55R

Trans. of Intern[ational] Conf[erence on] Semiconductors [held at] Prague. Proc[eedings] 1961, p. 824-828.

DESCRIPTORS: *Semiconductors, Optics, Electric fields, Electrical effects.

Theoretical Physics

Khilmi, G. F.
QUALITATIVE METHODS IN THE MANY-BODY PROBLEM. 1961, 128p.
Order from GB $6.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Celestial mechanics, *Quantum mechanics, *Particles, Motion, Theory

Novozhilov, Yu. V. and Tulub, A. V.
THE METHOD OF FUNCTIONALS IN THE QUANTUM THEORY OF FIELDS. 1961, 86p.
Order from GB $4.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Functional analysis, *Quantum statistics

Vlasov, A. A.
MANY-PARTICLE THEORY AND ITS APPLICATION TO PLASMA. 1961, 414p.
Order from GB $9.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Particles, Theory, *Plasma physics, Vibration, Crystals, High frequency, Generators

Thermodynamics

Bronsted, J. N.
PRINCIPLES AND PROBLEMS IN ENERGETICS, tr. by R. P. Bell, foreword by V. K. LaMer. [1961] 119p.
Order from Dover Publications, Inc., 180 Varick St., New York, 14, N. Y. $2.25

Trans. of unidentified Danish mono., n. p., n. d.

DESCRIPTORS: *Thermodynamics.

Bugaenko, G. A.
ON FREE CONVECTION IN AN INCLINED CYLINDER (O Svobodnoi Konvektsii v Naklonnom Tsilindre). July 61 [5]p. 2 refs. RTS 1884.
Order from OTS or SLA $1.10 61-27041

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1954, v. 18, no. 2, p. 212-214.

DESCRIPTORS: *Conical bodies, Continuous media, *Convection, Mathematical analysis, Heat transfer.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ANNUAL MEETING OF THE USSR ACADEMY OF SCIENCES (2-4 FEB 61). 3 Aug 61, 68p. JPRS: 8558.
Order from OTS $0.50 61-31517

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 3, p. 3-52.

DESCRIPTORS: *Scientific research, Scientific organizations, USSR, Conferences.

Contents:
Introduction
Opening address by Academician A. N. Nesmayanov, president of the Academy of Sciences, USSR
On the results of the scientific activities and the dissemination of completed scientific work during 1960
Discussion of the summary report
The final session.

IN THE PRESIDIUM AND SCIENTIFIC ESTABLISHMENTS (V Presidiume i Nauchnykh Uchrezhdeniyakh). 9 Aug 61 [5]p. JPRS: 9847.
Order from OTS or SLA $1.10 61-27960

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik, 1960 [v. 16] no. 6, p. 82.

DESCRIPTORS: *Laboratories, USSR, Organization, Medical laboratories, Biological laboratories.

THE PROBLEMS OF DEVELOPING THE PRODUCTIVE STRENGTH OF THE DZHEZKAZGAN INDUSTRIAL REGION. 11 Oct 61, 9p. JPRS: 10502.
Order from OTS $0.50 61-31649

Trans. of Akademiya Nauk Kazakhskoi SSR. Alma-Ata. Vestnik, 1961 [v. 17] no. 5(194) p. 99-103.

DESCRIPTORS: *Industrial research, Production, *Research program administration, *Scientific research.

Saparina, E.
TRANSDUCERS: MAN MADE AND NATURAL (Datchiki Snaruzhi i Vnutri Nas). 7 Sep 61 [9]p. JPRS: 10063.
Order from OTS or SLA $1.10 61-28410

Trans. of Znanie-Sila (USSR) 1961 [v. 36] no. 6, pt 34.

DESCRIPTORS: *Transducers, Tests.

The transducers "cemented" to the molecules composing us, those attached by nature inside us, and those made by engineers to investigate the organism from outside, are untiring reporters which reveal to us more and more secrets about ourselves. (Author)

Zhukovskii, S. R., Kazantsev, V. F., and Makarov, L. O.
HIGH-SPEED CINEMATOGRAPHY FOR INVESTIGATING PROCESSES IN LIQUIDS BY ULTRASONICS. [1961] 12p. 7 refs.
Order from OTS or SLA $1.60 61-18284

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 2, p. 133-140.

DESCRIPTORS: *Liquids, Photographic analysis, *Ultrasonics, *High speed photography, Motion pictures.

Communication Theory

HERALD OF COMMUNICATIONS, 1957 [VOL. 17] NO. 9(210). 31 Aug 61 [166]p. JPRS: 7032.
Order from OTS or SLA $12.00 61-28262

Trans. of Vestnik Svyazi (USSR) 1957 [v. 17] no. 9(210) including covers.

DESCRIPTORS: *Radio relay systems, *Radio relay stations, *Communication systems, *Coaxial cables, Impedance, USSR, Periodicals.

Contents:
Speeding up the rate of development of radio relay communications (editorial)
P-60/120 radio relay equipment, by S. V. Borodin
UIP-4k-type pulse instrument for measuring irregularities in wave impedance of coaxial cables, by G. V. Dem'yanchenko
Motors for rediffusion stations, by P. A. Sul'g
Frequency-division multiplexing of ATS trunks, by V. A. Fursov, and V. A. Lipkina
Communications and broadcasting facilities presented at the 1957 A-union industrial exhibitions
Business accounting in communications establishments, by P. V. Kuznetsov
The organization and operational use of communications facilities
The organization of technical services in the MTS line-equipment room, by E. I. Shishkin
On the damage of nonmetallic sheathed cables by rodents, by I. N. Pogosyan
Improving the training of young specialists at communications establishments, by A. I. Korzhenevskii
The transportation of materials by A. I. Smirnov
Offering the public supplementary communications services on a broader scale
The installation of cable entrances in repeater offices, by N. K. Vereshchagin, and V. G. Gorelov
To the 40th anniversary of the Great October Revolution on the occasion of the glorious anniversary
Socialist pledges successfully met
Memorable days, by I. S. Germanov
Efficiency promotion and invention
The use of "Dorozhnyy"-type receiver as a noise detecter, by E. A. Grachev
The creative work of efficiency experts and inventors
Communications engineering abroad
Wire broadcasting and television in Great Britain, by I. A. Shamshin.

Barthel, K. and Zitzmann, W.
THE LINE EQUIPMENT OF THE 12 MC CARRIER FREQUENCY SYSTEM. [1961] 14p.
Order from ATS $21.25 ATS-92N52G

Trans. of Siemens-Z[eitschrift] (West Germany) 1960, v. 34, no. 11, p. 777-786.
Another trans. is available from SLA $1.60 as 61-20543 [1961] 14p.

DESCRIPTORS: *Television communication systems, *Telephone communication systems, Voice communication systems, Communication systems, *Amplifiers, *Transmission lines, Frequency.

SOCIAL SCIENCES

GREET THE 22ND CONGRESS OF THE CPSU IN A WORTHY MANNER (Dostoino Vstretit' XXII S'ezd KPSS)! 15 Sep 61 [9]p. JPRS: 10078.
Order from OTS or SLA $1.10 61-28257

Trans. of Biologiya v Shkole (USSR) 1961, no. 4, p. 3-6.

DESCRIPTORS: *Communism, Growth, Economics, Culture, Biology, Training, USSR.

Lokshin, E.
PROBLEMS OF PLANNING MATERIAL AND TECHNICAL SUPPLY IN THE NATIONAL ECONOMY OF THE USSR [PT. I. AND CONTINUATION]. [1961] [15]p. TL 940; [DSIR LLU] M2093.
Order from OTS or SLA $1.60 61-13450

Abridged trans. from Planovoe Khozyaistvo (USSR) 1950, no. 2.

DESCRIPTORS: Materials, Industrial production, Fuels, Electric power production, Organization, *Economics, *Economic conditions, USSR.

Documentation

[Stokolova, N. A.]
THE "FILTER" SYSTEM FOR SEARCHING FOR CHEMICAL COMPOUNDS ACCORDING TO STRUCTURAL CHARACTERISTICS. Foreign Developments in Machine Translation and Information Processing no. 41. 5 Oct 61 [11]p. 3 refs. JPRS: 8991.
Order from OTS or SLA $1.60 61-28884.

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 1, 9p.

DESCRIPTORS: *Documentation, *Data processing systems, *Molecular structure, Cybernetics, Machine translation, Information theory, *Organic compounds, Structures, Classification.

A LIST OF LIBRARIES. 24 Aug 61 [9]p. JPRS: 4913. Order from OTS or SLA $1.10 61-28071

Trans. of Informatsionnyi Ukazatel' Bibliograficheskikh Spiskov i Kartotek (USSR) 1961, no. 9, p. 26-30.

DESCRIPTORS: *Bibliography, *Documentation, *Libraries, Records, Reports.

Fifty Soviet technical libraries are listed. Their addresses are given, and in some cases telephone numbers are included and the bibliographical services that they render are described and the prices that they charge are noted.

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ACCOMPLISHMENTS IN SCIENCE AND TECHNOLOGY, AND ADVANCED EXPERIENCE IN INDUSTRY AND CONSTRUCTION.
mono. Dostizheniya Nauki i Tekhniki i Peredovoi Opyt v Promyshlennosti i Stroitel'stva (Goryachaya Obrabotka Metallov) Vyp. 3, Moscow, 1960, p. 95-101, 102-146.

ATOMIC ENERGY (SELECTED ARTICLES).
Atomnaya Energiya (USSR) 1961, v. 10, p. 565-633.

NEWS OF THE INSTITUTES OF HIGHER LEARNING: INSTRUMENT MANUFACTURE (SELECTED ARTICLES).
Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1960, v. 3, no. 5, p. 3-9, 44-51, 52-62, 106-109.

Akhiezer, A. I. and others.
THE INFLUENCE OF RADIATION EFFECTS ON THE RELAXATION OF ELECTRONS AND ELECTRO-CONDUCTIVITY OF PLASMA IN STRONG MAGNETIC FIELD.
Vliyanie Radiatsionnykh Effektov na Relaksatsiya Elektronov i Elektropovodnest Plazmy v Sil'nom Magnitnom Pole.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61. (Paper) IAEA-CN-259.

Andreev, V. G. and others.
A SYSTEM OF PLASMA CONTAINMENT BY TRAVELING WAVE FIELD.
Sistema Uderzhaniya Plazmy Polem Begushchei Volny.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61. (Paper) IAEA-CN-250.

Anisimov, A. I. and others.
STUDY OF CHARGED PARTICLE DIFFUSION IN DENSE PLASMA IN MAGNETIC FIELD.
Issledovanie Diffuzii Zaryazhennykh Chastits Plotnoi Plazmy v Magnitnom Pole.
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Balebanov, V. M. and others.
MOTION OF SEPARATE CHARGED PARTICLES IN A TRAP WITH MAGNETIC PLUGS.
Dvizhenie Otdel'nykh Zaryakhennykh Vastits v Lovushke s Magnitnykh Probyami Tira Popy.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61. (Paper) IAEA-CN-23-124.

Bulyginskii, D. G. and others.
PULSED METHOD OF MEASURING THE ENERGY DISTRIBUTION OF PARTICLES ESCAPING FROM PLASMA.
Metod Impul'snogo Izmereniya Energeticheskogo Raspredeleniya Chastits, Vykhodyashchikh iz Plazmy.
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Burtsov, V. A. and others.
EXPERIMENTAL STUDIES OF ELECTRICAL AND MAGNETIC CHARACTERISTICS OF GASEOUS DISCHARGE AT THE "ALPHA" DEVICE.
Eksperimental'nye Issledovaniya Elektricheskikh i Magnitnykh Kharakteristik Gozovogo Razryada no Ustanovie "Al'fa".
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Demirkhanov, R. A. and others.
INVESTIGATIONS OF DISCHARGE DEVELOPMENT CONDITIONS IN IAEA-CN-234.
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Dnestrovskii, Yu. N. and others.
ON ELECTROMAGNETIC WAVES PROPAGATING IN MAGNETO-ACTIVE PLASMA ACROSS EXTERNAL MAGNETIC FIELD.
Ob Elektromagnitnykh Volnakh, Rasprostranyanyushchikhaya v Magnitoaktivnoi Plazme Poperek Vneshnego Magnitnogo Polym.
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Fisher, I. Z.
STATISTICAL THEORY OF FLUIDS.
mono. Statisticheskaya Teoriya Zhidkostei, Moscow, 1961, 280p. To be published by Prentice-Hall, Inc.

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INJECTION OF PLASMA INTO VACUUM FROM STRONG PULSE DISCHARGE.
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Kochanovskii, N. Ya.
EQUIPMENT FOR ELECTROSLAG WELDING.
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SPECTROSCOPIC MEASUREMENTS OF ION TEMPERATURE AT THE DEVICE "TOKOMAK".
Spektroskoficheskoi Izmerenie Temperatury Ionor na Vsmerenie "Tokomak".
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Kovan, I. A. and others.
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Levin, M. L. and others.
A METHOD OF STRONG FOCUSING FOR STABILIZING STRAIGHT AND TOROIDAL DISCHARGES.
Metod Sil'noi Fokusirovki dlya Stabilizatsii Pryamykh i Toroidal'nykh Razryadov.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61. (Paper) IAEA-CN-251.

Markushevich, A. I.
THE THEORY OF ANALYTIC FUNCTIONS.
mono. Teoriya Analiticheskikh Funktsii, Moscow, 1950, 703p. To be published by Prentice-Hall, Inc.

Osovets, S. M. and others.
STUDY OF VARIOUS STATES OF COMPRESSION.
Issledovanie Razlichanykh Sostoyanii Szhatiya.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61.
(Paper) IAEA-CN-18-294.

Ponomarev, K. K.
COMPUTATION OF ELASTIC SYSTEMS BY METHOD OF CONTINUATION.
mono. Moscow U. Bulletin (sic) (USSR) 1959, no. 6, p. 12-36.
To be published in ARS Journal, 500 Fifth Avenue, New York 36, N. Y.

Rashitskii, E. A.
ELECTRON BEAM INTERACTION WITH PLASMA IN MAGNETIC FIELD.
O Vzaimodeistvii Elektronnogo Puchka s Plazmoi v Magnitnom Pole.
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(Paper) IAEA-CN-252.

Robillard, A.
INFLUENCE OF HEAT TREATMENTS IN THE BETA AND GAMMA PHASES ON THE MICROGRAPHIC STRUCTURE OF URANIUM.
Influence des Traitments Thermiques en Phases Beta et Gamme sur la Structure Micrographique de l'Uranium.
Commissariat a l'Energie Atomique (France) no. 1057, 1959 (thesis).

Rokhomov, V. I. and others.
ON MAGNETIC SLOWING DOWN OF RADIATION FROM ELECTRONS IN PLASMA.
O Magnitnotormoznom Izluchenii Elektronov Plazmy.
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Silin, V. R.
THE TEXT OF THE LECTURE ON THE THEORY OF FLUCTUATION IN PLASMA.
Test Doklada k Teorii Fluktatsii v Plazme.
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ON THE STRUCTURE OF NON-LINEAR WAVES IN PLASMA.
O Strukture Nelinsinykh Voln v Plazme.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61.
(Paper) IAEA-CN-246.

Vainshtein, L. A.
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SHOCK WAVES IN RAREFIED PLASMA.
Udarnye Volny v Razrezhennoi Plazme.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61.
(Paper) IAEA-CN-18-296.

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MOTION OF PLASMA CLUSTERS IN HETEROGENEOUS FIELD.
Dvizhenie Plazmennykh Soustkov v Neodorodnom.
Conference on Plasma Physics and Controlled Nuclear Fusion Research, Salzburg, 4-9 Sep 61.
(Paper) IAEA-CN-229.

Volkov, T. F. and others.
THE SALZBURG CONFERENCE ON THE STABILIZATION OF LOW PRESSURE PLASMA: A REPORT.
Dokladna Konferentsii v Zol'toburge Stabilizatsiya Plazmy Nizkogo Davleniya.
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PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume , Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.